THE LANCET.

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CONTENTS.

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BRADSHAW LECTURE on the Brain Structures concerned in Vision. Delivered before the Royal College of Surgeons of England on Dec. 11th, 1909, by FRANCIS RICHARDSON CROSS, M.B. Lond., F.R.C.S. Eng., Consulting Ophthalmic Surgeon to the Bristol Royal Infirmary and Surgeon to the Bristol Eye Hospital..... 1799

THE HUGHLINGS JACKSON LECTURE on Special Sense Discharges from Organic Disease. Delivered before the Neurological Section of the Royal Society of Medicine on Nov. 25th, 1909, by Sir WILLIAM R. GOWERS, M.D.Lond., F.R.S., Consulting Physician to University College Hospital, London; Physician to the National Hospital for the Paralysed and Epileptic, Queen-square, W.C. 1803

ORIGINAL ARTICLES.

Latent Chorea: A Contribution to the Study of Sydenham's Chorea. By REGINALD MILLER, M. D. Lond., M.R.C.P. Lond., Physician to Out-patients, Paddington Green Children's Hospital; Assistant Physician to Out-patients, St. Mary's Hospital 1808

Notes of a Case of X Ray Ulcers Cured by Hilton's Method. By AGNES F. SAVILL, M.A. St. And., M.D. Glasg., M. R. C. P. Irel., Assistant Physician to St. John's Hospital for Diseases of the Skin, Leicester-square 1811

Action of Cryogenine on Phthisical Temperature. By J. E. GORDON, M.D. Edin., Medical Superintendent, Devon and Cornwall Sanatorium.—*(Illustrated)* 1812

A Case of Peripheral Neuritis (Alcoholic). By JOHN WYLLIE, M.D.Glasg. 1814

A Case of Pneumonia Migrans. By H. BUCKLEY RODERICK, M.A., M.D.Camb. 1815

A Case of Syphilis of the Pancreas with a Pancreatic Calculus in the Duct. By J. GEORGE TAYLOR, M.A., M.D. Cantab., M. R. C. P. Lond., Honorary Physician, General Infirmary, Chester 1816

A Case of "Status Lymphaticus" with Sudden Death. By R. W. S. WALKER, M.B. Cantab., M.R.C.S.Eng., late House Surgeon at the Great Northern Central Hospital, London 1816

MEDICAL SOCIETIES.

ROYAL SOCIETY OF MEDICINE:

CLINICAL SECTION:—Gumma simulating Malignant Disease.—Exhibition of Cases 1817

LARYNGOLOGICAL SECTION: Exhibition of Cases and Specimens..... 1818

ROYAL SOCIETY OF MEDICINE:

THERAPEUTICAL AND PHARMACOLOGICAL SECTION:—Phosphorus Poisoning.—The Lactic Acid Bacillus... 1818

SECTION OF ANÆSTHETICS:—Lymphatism 1819

MEDICAL SOCIETY OF LONDON: Auricular Fibrillation 1820

ROYAL ACADEMY OF MEDICINE IN IRELAND: Hypertrophic Cirrhosis of Liver with Alcoholic Paralysis.—Exhibition of Specimens.—Spleno-medullary Leukæmia.—Sane Hallucinations 1820

MEDICO-LEGAL SOCIETY: The Effects of Traumatism upon the Nervous System ... 1821

MANCHESTER MEDICAL SOCIETY: The Etiology of Heberden's Nodes 1822

UNITED SERVICES MEDICAL SOCIETY: Notes on Seven-day Fever of Eastern Ports 1822

LEEDS & WEST RIDING MEDICO-CHIRURGICAL SOCIETY: The X Ray Diagnosis of Renal Calculus 1822

REVIEWS AND NOTICES OF BOOKS.

Mosquito or Man? The Conquest of the Tropical World. By Sir Rubert Boyce, F.R.S. 1823

The Physiological Feeding of Infants. By Hric Pritchard, M.D. Oxon., M.R.C.P. Lond. Third Edition 1824

Gall-stones, their Complications and Treatment. By A. W. Mayo Robson, D.Sc. Leeds, F.R.C.S.Eng., and P. J. Cammidge, M.D.Lond. ... 1825

Volksseucher: (Epidemic Diseases). Edited by Professor Dr. R. Kutner 1826

The Ophthalmic Year-Book. Edited by Edward Jackson, A.M., M.D., George E. de Schweinitz, A.M., M.D., and Theodore B. Schneideman, A.M., M.D. 1826

First Principles of Chemical Theory. By C. H. Mathewson, Ph.D. 1827

Guy's Hospital Nursing Guide, 1909. Edited by the Matron.. 1827

Transactions of the American Otological Society 1827

Annals of Otology, Rhinology, and Laryngology 1827

Christmas and New Year Cards, &c. 1827

Manchester Medical Review ... 1827

Journal of Laryngology, Rhinology, and Otology 1827

NEW INVENTIONS.

A New Æsthesiometer.—*(Illustrated)* 1828

LEADING ARTICLES.

THE MEDICAL CURRICULUM OF EDINBURGH UNIVERSITY..... 1830

THE STRUCTURE OF ISOLATION HOSPITALS AND SANATORIUMS 1830

CHOLERA IN EUROPE IN 1909 ... 1831

ANNOTATIONS.

The Beit Memorial Fellowships for Medical Research 1833

King Edward's Hospital Fund for London 1833

Oliver Goldsmith 1833

The Medical Directory, 1910 ... 1834

The Destruction of Rats on Shipboard 1834

The National League for Physical Education and Improvement 1835

Broca's Convolution and Motor Aphasia 1835

The Keeping of Pigs..... 1836

Chronic Infective Endocarditis 1836

The Proposal to Appoint a New Medical Officer to the London County Council 1837

The Death of Dr. Ludwig Mond, F.R.S. 1837

Research Defence Society 1837

The late Sir Alfred Jones, K.C.M.G. 1838

A Further Note on Enteric fin... 1838

A Survey of the Present Position of Cancer Research 1838

LOOKING BACK.

(From THE LANCET, Saturday, Dec. 17th, 1831.)

The Cholera in the North of England..... 1844

VITAL STATISTICS:

Health of English Towns ... 1844

Health of Scotch Towns 1845

Health of Irish Towns..... 1845

Vital Statistics of London during November, 1909 ... 1845

Analysis of Sickness and Mortality Statistics in London during November, 1909 ... 1846

SPECIAL ARTICLES.

Medicine and the Law: A Foolish Libel on a Medical Inspector of Schools; Typhoid Fever from Eating Oysters 1828

Royal College of Surgeons of England: Meeting of Council 1829

The John Herbert Wells Fund 1829

The Beit Memorial Fellowships for Medical Research 1839

The Standardisation of Disinfectants: Criticisms of our Commissioners' Report 1841

The Feeding of Necessitous London School Children 1843

The Services..... 1847

The Poor-law Medical Service in France 1847

The 1909 Cholera Epidemic in Europe and Sporadic Plague in the Near East..... 1855

Liverpool: Roentgen Ray Installation at the Liverpool Royal Infirmary 1857

Bristol and Western Counties: Testimonial to Prof. Lloyd Morgan 1859

Scotland: The Proposed Reform of the Medical Curriculum in Edinburgh..... 1859

Ireland: The Irish Universities; Irish Meat-supplies... 1860

Italy: Honours to Enrico Giglioli; Superstition 1861

Vienna: The Annual Meeting of the Austrian Medical Councils..... 1861

Royal Society of Medicine: a Special Meeting of the Fellows; the Annual Dinner 1863

CORRESPONDENCE.

The Plea of Lunacy in the Criminal Courts of Scotland (Dr. P. Fraser Mackenna) ... 1848

The Standardisation of Disinfectants (Dr. Samuel Rideal, Mr. C. T. Kingzett, Messrs. Edward Cook and Co., Ltd.) 1849

The Congenital Factor in Hernia and its Bearing on the Operation of Radical Cure (Mr. Edward Deanesly) 1852

The Lister Institute of Preventive Medicine and the World's Graphic Press (Dr. Charles J. Martin) 1853

The Influence of Mind as a Therapeutic Agent (Mr. Douglas Bryan, Mr. Haydn Brown) 1853

The Hard Case of the London Student (Mr. J. H. Graham) 1854

The British White Cross Milk Company (Dr. Alfred S. Gubb) 1854

The Therapeutic Value of Liquid Air and Solid Carbon Dioxide (Dr. Reginald Morton) 1854

Adams *v.* Pomeroy: an Appeal (Sir Wm. Whitla and others) 1854

A Disclaimer (Messrs. F. Kimber Bull and Duncan) ... 1855

Annual Meeting of the Royal College of Surgeons of England 1856

The Classification of Odours (Dr. J. M. Fortescue-Brickdale)..... 1869

The Weight of Hand-fed Infants 1870

The Manufacture of Nitro-Benzols and Aniline Compounds 1870

OBITUARY.

William Bramwell Ransom, M.A. Cantab., M.D., B.Sc. Lond., F.R.C.P.Lond. 1864

George Frederick Bergin, M.B. Lond., L.R.C.P.Lond., &c. ... 1865

Mark Farrant, L.R.C.P.Lond., M.R.C.S.Eng., D.P.H..... 1866

MEDICAL NEWS.

University of Durham..... 1829

The Care of Poor-law Children in Brighton 1839

Russian Exhibition of Psychiatry 1839

Epsom College: the Annual Dinner of the Epsomian Club 1840

Health Exhibition in connexion with the Congress of the Royal Sanitary Institute 1847

Alvarenga Prize of the College of Physicians of Philadelphia 1855

Pregnancy and Employment .. 1857

Pass-lists of the Royal College of Surgeons of England and the University of Oxford..... 1866

The Sewerage of Okehampton (Devon) 1867

Plague in India 1867

Sanitary Inspectors under Public Health (London) Act, 1891 1867

University of Cambridge..... 1867

Books, &c., received 1867

Appointments..... 1867

Vacancies 1868

Births, Marriages, and Deaths 1868

Notes, Short Comments, and Answers to Correspondents.. 1869

Medical Diary 1871

Acknowledgments of Communications received 1872

FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.

INDEX

MEDICAL AND OTHER BOOKS AND PUBLICATIONS

COVER PAGE

BAILLIERE, TINDALL & COX:—
Campbell.... Treatment..... .. 1
Walsh ..... Quacks 1

CHURCHILL, J. & A.:—
Bigg ..... Spinal Curvatures..... 1
Medical Directory for 1910 1
Transactions of the Ophthalmological Society of the United Kingdom 1

GLAISHER:—
Horsehell .. Soured Milk, &c..... 1

KIMPTON:—
Compton .... Essentials of Surgery .. 1

LEWIS:—
Roth..... Curvature of the Spine 1

LONGMANS, GREEN & CO.:—
Bennett, Sir W. .... Massage & Movements in Recent Fractures .. 1
Probyn-Williams.. Guide to Administration of Anæsthetics .. 1

MEDICAL PUBLISHING CO.:—
Lane ..... Cleft Palate & Hare Lip 1
" ..... Treatment of Fractures 1

MURRAY:—
Boyce ..... Mosquito or Man? 1

NISBET & CO.:—
Bennett, Sir Wm. ..... Injuries, &c., of the Knee-joint 1
Lane ..... Chronic Constipation .. 1

SAUNDERS COMPANY:—
Saunders' New Editions of Successful Books 1

SMITH, ELDER & CO.:— PAGE
Weber & Weber .... Climatotherapy and Balneotherapy..... 1

ARNOLD:—
Calwell .... Medical Treatment 9
Hutchison .. Diseases of Children 9
Parkes ..... Diseases of the Nose, &c. 9
Savill ..... Clinical Medicine 9
Stewart .... Nervous Diseases 9
Whitfield .. Skin Diseases 9

BAILLIERE, TINDALL & COX:—
Andrews .... Age Incidence, &c..... 5
Axenfeld.... Bacteriology of the Eye 5
Bidwell .... Intestinal Surgery.. .. 6
Ferguson.... Mathematics of Hygiene 5
Green ..... Pathology 5
Knox ..... Microscopical Diagnosis 5
May & Worth Diseases of the Eye 5
McKay ..... Operations on the Uterus 5
Moor & Hewlett .. Applied Bacteriology .. 5
Moor & Partridge.. Analysis of Food and Drugs 5
Murrell .... Forensic Medicine 5
Politzer .... Diseases of the Ear 5
Walters .... Open-Air &c. Treatment of Pulmonary Tuberculosis 5

CASSELL & CO.:—
Morris, Sir M. .... Diseases of the Skin.... 6

CHURCHILL, J. & A.:—
Cripps ..... Ovariotomy, &c. 9

FROWDE AND HODDER & STOUGHTON:—
Lockwood .. Aseptic Surgery..... 8
" .. Clinical Lectures and Addresses in Surgery.. 8

GLAISHER:—
West ..... Granular Kidney, &c... 6

LEWIS:—
Buxton..... Anæsthetics 5
Cooper ..... Sexual Disabilities of Man 5
Emery ..... Immunity and Specific Therapy 5
Gordon..... Diseases of the Nervous System 5
Kenwood.... Public Health Laboratory Work 5
Lewers..... Diseases of Women 9
" ..... Cancer of the Uterus .. 9
Oliver ..... Studies in Blood-Pressure 5
Parkes & Kenwood.. Hygiene & Public Health 5
Powell, Sir R. D..... Diseases and Disorders of the Heart 5
Stoddart .... The Mind, &c. 5
Tilley ..... Diseases of the Nose, &c. 5
White ..... Catarrhal Fevers 5

LONGMANS, GREEN & CO.:—
Goodsall & Miles..... Diseases of the Anus and Rectum 8

MACLEHOSE & SONS (GLASGOW):—
Barr & Barr. Diseases of the Ear 6
Downie .... Diseases of the Throat 6

MACMILLAN & CO.:—
Lockwood .. Appendicitis 8
Hewitt ..... Anæsthetics and their Administration 8

METHUEN & CO.:—
Cavanagh .. The Care of the Body .. 9
Childe ..... Control of a Scourge .. 9
Closerton .. The Hygiene of Mind .. 9
Drink Problem 9
Gorst, Sir J. E. Children of the Nation 9

METHUEN & CO.—(Continued). PAGE
Macfie ..... Air and Health 9
Newman .... Infant Mortality 9
Newsholme.. Prevention of Tuberculosis 9
Oliver, Sir T. Diseases of Occupation 9
Sainsbury .. Drugs, &c. 9
Schofield .... Functional Nerve Diseases 9

REBMAN:—
Bland-Sutton & Giles .... Diseases of Women 6
Joseph ..... Short Handbook of Cosmetics 6
Montgomery. Gynæcology 6
Sobieip .. Hæmatological Atlas .. 6
Surgical Anatomy 6

SAUNDERS COMPANY:—
Bandler. .... Medical Gynecology.... 7
Bickham .... Operative Surgery..... 7
Eisendra.D.. Surgical Diagnosis 7
Kerley ..... Treatment of Diseases of Children 7
Stelwagon .. Diseases of the Skin.... 7

SIMPKIN, MARSHALL & CO.:—
Gaude ..... Lucasy Practice..... 8

SPRAGUE & CO.:—
Ernst..... Orthopædic Appara us Guide 6

WRIGHT & SONS (BRISTOL):—
Lejars ..... Urgent Surgery 8

MEDICAL LIBRARIES, &c.:—
Baker—Book Bargains 8
Beasley & Kitley—Stammering 8
Behnke—Stammering 8
Collingwood—Garden Books..... 8
Matthews Bros—
Wood: Application of Trusses.... 8
Seymour—How to Speak Effectively.. 8

OFFICIAL AND GENERAL ANNOUNCEMENTS

APPOINTMENTS VACANT:—
Birkenhead Borough Hospital 74
Brighton, Hove, and Preston Dispensary 73
Bristol Royal Infirmary 75
Cancer Hospital, Fulham-road..... 74
Chelsea Hospital for Women..... 74
County Borough of Great Yarmouth.. 75
Derbyshire Royal Infirmary, Derby .. 75
East London Hospital for Children, &c., Shadwell 74
Edmonton Union Infirmary 75
Evelina Hospital for Sick Children, Southwark 72
Farringdon General Dispensary 75
Free Eye Hospital, Southampton 75
Greenock Infirmary 75
Grimsby and District Hospital 72
Hastings, St. Leonards, and East Sussex Hospital 74
Home for Aged and Infirm Tooting.. 75
Hôpital Français, Shaftesbury Avenue 74
Hospital for Sick Children, Great Ormond-street 74
Indian Medical Service 75
Kent County Asylum, Chartham..... 72
Leeds Public Dispensary..... 75
Manchester Children's Hospital..... 73
Medical Mission Hospital, Plaistow .. 74
Metropolitan Hospital, Kingsland-rd. 74
Middlesex Hospital Medical School .. 73
Mount Vernon Hos. for Consumption 75
Northampton General Hospital 73
Pearson & Knowles Ironworks Sick and Accident Society, Warrington.. 74
Queen Charlotte's Lying-in Hospital.. 73
Royal Albert Orphan Asylum, Devonport .. 75
Royal Eye Hospital, Southwark..... 73
Royal Infirmary, Hull..... 74
Royal National Orthopædic Hospital 74
Royal Surrey County Hospital, Guildford 74
Royal Victoria Hospital, Montreal .. 73
St. Mark's Hospital for Fistula, City-road 74
St. Marylebone General Dispensary .. 74
Sheffield Royal Hospital 74
Somerset County Council Education Committee 75
Sussex County Hospital, Brighton..... 74
Victoria Hospital for Children, Chelsea 73
West Bromwich District Hospital..... 74
West Herts Hos., Hemel Hempstead.. 73
West London Hos., Hammersmith-rd. 73
Wolverhampton and Staffordshire General Hospital 74
Wye House Asylum, Buxton..... 75

ASSISTANCIES, MEDICAL 10

ASYLUMS, HOMES, &c.:—
Applegarth Sanatorium, Northallerton 71
Ashwood House, Kingswinford 66
Farnaley Hall, Bromsgrove 67
Parnwood House Hospital 67
Penson, Ashover 72

ASYLUMS—(Continued).
Bishopstone House, Bedford 66
Braeside, Ruan Minor 72
Brunton House, Lancaster 71
Buntingford House Retreat, Buntingford 69
Camberwell House, Peckham-road.... 68
Chateau Chatelaine, Geneva 71
Cheadle Royal 66
Clarence Lodge, Clapham-park..... 66
Coppice, The, Nottingham 67
Court Hall, Kenton 67
Crooksbury Sanatorium, Surrey 70
Dalrymple House, Rickmansworth .. 65
David Lewis Colony, Alderley Edge .. 71
Ferguson, Bamet..... 72
Ghyll Retreat, Cockermouth 69
Grove House, Church Stretton..... 67
Grove, The, Catton, Norwich 67
Haslemere Nursing Home 72
Haydn Brown, Caterham Valley 72
Haydock Lodge, Newton-le-Willows.. 68
Heigham Hall, Norwich 66
Henrietta House, Cavendish-square .. 72
House for Epileptics, Maghull 71
Hon. Sec., Outer Temple..... 72
Invernith Lodge Retreat, Colinsburgh 69
Kingsdown House, Box 68
Lady Superintendent, Streatham 71
Leigh House, Warwick..... 71
London Fever Hospital, Islington 71
London Open-Air Sanatorium, Wokingham 70
Mailing-place, Kent 67
Manna Mead, Blackheath 72
M.B., North Finchley 72
Melbourne House, Leicester 68
Middleton Hall, Co. Durham..... 66
Moat House, Tamworth 67
Newlands House, Tooting 66
Newmains Retreat, Lanarkshire 69
Nordrach-on-Dee, Banchory 70
Nordrach-upon-Mendip Sanatorium .. 69
Northlands Retreat, Wandsworth 68
Northumberland House, Finsbury-pk. 68
Northwoods House, Winterbourne.... 66
Norwood Sanatorium 69
No. 116, L.O., Strand..... 72
No. 576, L.O., Strand..... 72
No. 762, L.O., Strand..... 72
No. 972, L.O., Strand..... 72
Ochil Hills Sanatorium, Menathorpe.. 66
Osea Island, Heybridge 65
Palmerston Sanatorium..... 71
Peckham House, Peckham-road 68
Plas-yn-Dinas, Merionethshire..... 68
Plympton House, South Devon..... 67
Portsmouth Corporation Mental Hos. 67
St. Andrew's Hospital, Northampton 67
St. Luke's Hospital, E.C. 66
Sanatorium Clavadel 70
Springfield House Private Asylum, Bedford 67
Stocker, Craven-street 72
Stoke Park Colony, Bristol 71
Stretton House, Church Stretton..... 67
The Grange, Rotherham 66
The Retreat, Witham 66
The Retreat, York 66
Tower House, Leicester 65

ASYLUMS—(Continued).
Vale of Clwyd Sanatorium..... 10
Warneford Asylum, Oxford 66
Whitmead Hill Sanatorium, Farnham 71
Wonford House, Exeter 67
Wye House, Buxton 67
Yarrow Convalescent Home, Broadstairs..... 69

FINANCIAL, &c.:—
Birkbeck Bank..... 63
Equitable Reversionary Interest Soc. 64

HEALTH RESORTS, BATHS, &c.:—
Aberystwyth, the Biarritz of Wales .. 71
Leysin, Switzerland 70
Smedley's, Matlock 71
The Harrogate Hydropathic..... 71

HOTELS, &c.:—
Barton Court Hotel, New Milton 11

HOUSE & ESTATE AGENTS:—
Bedford & Co., Wigmore-street 76
Clark, Wimpole-street..... 79
Hoe, Basinghall-street..... 79
Tees, Waltham Green..... 79
CONSULTING-ROOMS:—
No. 776, L.O., Strand..... 79
27, Welbeck-street 79

LIFE & FIRE ASSURANCES:—
General Life Assurance Co. 64
National Provident Institution 64
Prudential 64
Royal Exchange Assurance 64

MASSAGE:—
H. M. S., Regent's Park 72

MEDICAL ACCOUNTANTS, &c.:—
Turner 80

MEDICAL AGENTS:—
Blundell & Rigby 75
Fieldhall, Limited 76
Griffiths 80
Manchester Medical Agency 76
Manchester Medical Association 79
Medical Agency 79
Needes, Herbert 75
Needes, J. C. 79
Peacock & Hadley 76
Reynolds & Branson 75
Scholastic, Clerical, &c., Assoc. 78
Turner 77

MEDICAL SCHOOLS:—
(LONDON.)
West London Post-Graduate College 62

NURSING INSTITUTES:—
Army and Navy Male Nurses' Co-operation 64
General Nursing Association..... 64

NURSING INST.—(Continued).
Hospital for Sick Children, Great Ormond-street 61
Leeds Trained Nurses' Institution.... 64
London Nurses' Association 64
London Temperance Male and Female Nurses' Co-operation 65
Male Nurses' Association 65
Male Nurses' Co-operation 65
Mental Nurses' Co-operation 64
National Hos. Male Nurses' Assoc..... 64
Nurses' Co-operation, Portland-place 64
Registered Nurses' Society 64
St. John's House 64
St. Luke's Hospital, E.C. 65
Temperance Male and Female Nurses' Co-operation 64
Temperance Male Nurses' Co-operation 65

OFFICIAL NOTICES:—
Beit Memorial Fellowships for Medical Research 62
City of London Lying-in Hospital..... 62
Exhibition of Hygiene..... 63
London School of Clinical Medicine .. 62
Medical Graduates' College, &c. 62
National University of Ireland 63
North-East London Post-Graduate College 62
Queen Charlotte's Lying-in Hospital.. 62
Royal Institute of Public Health 62
Royal London Ophthalmic Hospital.. 62
Society for Relief of Widows, &c., of Medical Men..... 62
Throat Hospital, Golden-square..... 62
University of Cambridge..... 62
University of Oxford 65
West End Hospital for Diseases of the Nervous System 62

PARTNERSHIPS & PRACTICES:—
Dowse, Kingsland-road 80
Manchester Clerical, &c., Association 80
M. D., Grosvenor-square 80
No. 718, L.O., Strand..... 80
No. 735, L.O., Strand..... 80
No. 755, L.O., Strand..... 80
No. 758, L.O., Strand..... 80
No. 759, L.O., Strand..... 80
No. 761, L.O., Strand..... 80
No. 765, L.O., Strand..... 80
No. 769, L.O., Strand..... 80
Peacock & Hadley, Craven-street .. 80
Turner, Aleiphi 80

RAILWAY & STEAMSHIP CO.'S:—
Elder, Dempster & Co.—
Tours to Jamaica 63
New Zealand Shipping Co..... 63
R.M.S.P.—Luxurious Pleasure Cruises 63
" Tours to the West Indies .. 63

TUTORS & LECTURERS:—
Caldwell ..... 65 | Knight 65
Carlyon College 65 | No. 967, L.O. .. 65
Fellowship ... 65 | Schnelle 65
Gemmell ..... 65 | Weymouth 64

(For Index to Trade and Miscellaneous Advertisements see page 4.)

The Bradshaw Lecture

ON

THE BRAIN STRUCTURES CONCERNED IN VISION.

Delivered before the Royal College of Surgeons of England on Dec. 11th, 1909,

BY FRANCIS RICHARDSON CROSS, M.B. LOND., F.R.C.S. ENG.,

CONSULTING OPHTHALMIC SURGEON TO THE BRISTOL ROYAL INFIRMARY AND SURGEON TO THE BRISTOL EYE HOSPITAL.

COMPARATIVE ANATOMY.

MR. PRESIDENT AND GENTLEMEN,—In the lower vertebrata a simple brain is formed by enlargement of the anterior end of the spinal cord and by the widening and division of its central canal to form ventricles. Upon this primitive brain swellings are developed in connexion with the sense of sight and smell. The sense of smell seems first of early importance probably for selection between nutritious or poisonous foods or a means of safety. In fishes we find the visual organs well developed and varying in importance with the necessity in the species for more or less perfect sight: optic lobes and tracts, an optic chiasma and infundibulum, a third, fourth, and lateral ventricles and corpora geniculata underneath the optic thalamus. These often vary conversely in importance with the olfactory region, which is enlarged when smell is the more needed function. In all fish the optic nerves cross quite separately one above the other, from one eye to the opposite optic lobe, or one nerve may pass through a slit in the opposite one.

In amphibians the brain is usually of low type but rather large. In the proteus, which is practically blind, the optic lobes are scarcely recognisable, but in the frog they are large and form the broadest part of the brain. In the reptilia the brain is long and narrow, but it has become much increased in size and is well differentiated, and we get a very definite cerebral cortex. The three mantles of the brain exist as found in mammals: (1) the basal pallium or pyriform; (2) the marginal pallium or hippocampal; and (3) the neopallium or higher cortex (brain proper).

The brain in birds is broad and highly developed, enlarged chiefly by the size of the corpora striata. All the structures upon which sight depends are very well developed. The thalamus and optic lobes are highly organised, and there are even present small temporal and occipital lobes. In birds the optic chiasma is single and complete and crosses over the infundibulum. The bundles of fibres from each optic nerve interlace and alternate, but those of each nerve completely decussate to the opposite side. The optic tracts pass round the optic thalami and show well-developed geniculate bodies. In birds of prey, where rapid coördination between the seeing and capturing of their prey is essential, the optic lobes are very strongly developed. Vision is, as a rule, panoramic, one eye for each side. (The fowl sees its food one eye at a time.) The owls and hawks, whose eyes look forward and who undoubtedly possess a considerable field of binocular vision to enable them to catch their living prey; probably no fibres from the optic nerve pass direct without decussation. Their vision is binocular, but not stereoscopic, for which direct as well as decussating fibres are required.

In the marsupials the brain becomes still more highly organised. On the mesial surface of the hemispheres there appears a sulcus which runs horizontally behind and parallel with the hippocampal. This is the calcarine, or splenial, about which the cortical substratum for vision is placed; it is one of the earliest, best defined, and most constant fissures of the brain, and it can already be shown to form the calcar avis in the ventricle. A genual and a rostral sulcus also show on the mesial surface of the hemisphere, although no corpus callosum as yet exists.

When we reach the placental mammals a corpus callosum becomes developed and completes the three great commissures with the anterior and the hippocampal. In the colugo (insectivora) the sulci on the brain become more marked; the most definite is a deep calcarine sulcus running horizontally forward, almost the whole length of the mesial surface of the hemisphere; there are also very large anterior quadrigeminal bodies. In the many families of rodents there is a peculiar absence of sulci, especially on the mesial aspect of the brain, and the calcarine fissure is rarely seen. The squirrel requires very accurate sight, and he has large optic nerves and very developed anterior quadrigeminal bodies. The rabbit and the hare probably possess a very acute sense of hearing. They live to avoid being captured. The eyes are placed so much on the side of the head that each carries an enormous range over its field of vision, and they can see laterally and behind almost as well as in front. This wide panoramic vision cannot well be associated with any great binocular effort; nearly all the optic nerve fibres decussate.

In the carnivora the brain proper is highly developed; it passes forward over the olfactory bulb and backward over the cerebellum. There is a very high degree of binocular vision. In the fruit-eating carnivora the eyes are at the side of the head and they possess only a limited convergence. But in the felidæ and others the eyes are set forward and the pupil is very active. These animals require good distant vision, often when the light is dull, and they also need very reliable closer sight and a most perfect coördination of the eyes with the fore limb, by which they catch their prey. In the optic chiasma there are considerable direct as well as decussating fibres. There is a deep calcarine sulcus which with the intercalary shuts off a posterior lobe from the rest of the brain. In some species there appear secondary fissures, running out of the calcarine or even a definite retrocalcarine.

The ungulata are large animals and they need a large brain, but the mesial area is very simple. There is no high specialisation in the calcarine fissure; it is large and placed behind the splenium. It joins the intercalary and this the genual, showing a complex splenial or a form of cingular arc. The eyes are usually placed on the side of the head and separated by the forehead or nose. There is a wide area of periscopic sight, but they only have a limited amount of convergence and binocular vision. In the horse about one-sixth of the fibres decussate.

In periscopic vision each eye is responsible for the field on its own side, and as this is represented on the opposite side of the brain all the optic nerve fibres must decussate. When the eyes tend to converge and give slight binocular vision a part of the nasal side of each field is overlapped. The superimposed parts have crossed to the opposite side of the middle line. The extreme nasal side of the right field is now concerned with the left field of vision, and the fibres that represent this must go to the opposite side of the brain. As the eyes turn more forward more and more of the nasal fields overlap, and more and more direct fibres are required. In perfect stereoscopic vision both visual axes must be turned towards the object looked at. The whole nasal field is carried across the middle line; we thus have an almost complete overlapping of the two fields, and, what is more important, overlapping of the objects seen by the two maculæ.

In the monkeys the calcarine sulcus becomes the centre of further developments. In the aye-aye and lemurs it is somewhat vertical, but in the tamarin, one of the anthropoid apes, and marmoset, a long single sulcus is prolonged horizontally far back into an elongated occipital lobe, which measures nearly half of the brain. In the squirrel monkey (cebidae) almost half the hemisphere lies behind the splenium. In this large occipital lobe the calcarine sulcus terminates in a wide-shaped bifurcation, and several other compensatory calcarine sulci are developed. The collateral runs forward on its ventral side and from its dorsal runs up a parieto-occipital sulcus close behind the intraparietal. In the macacus we have the higher organisation of the old-world monkeys: the smell organs are well seen but diminishing. The long bifid retrocalcarine, the callosal and the parieto-occipital with the intraparietal sulci are well developed, and the general conformation of the brain, especially in the occipital lobe, closely resembles that seen in man.

THE VISUAL PATH IN MAN.

The optic chiasma has very important relations with the third ventricle and with the structures adjoining it; and lesions involving this ventricle would be likely to cause visual symptoms. The lamina cinerea, the very vascular "anterior perforated space" and the tuber cinereum, are

important relations of the optic chiasma, and bitemporal defects of the visual fields might be expected to arise from many directions. In some cases of primary optic atrophy I have seen a narrowing of the nasal fields which I have taken to be due to some error in the anterior perforated space. Acromegaly seems undoubtedly to depend on a diseased condition of the pituitary body, and the close relationship of the latter with the chiasma accounts for the early onset of bitemporal hemianopsia. Bitemporal hemianopsia from implications of the chiasma may, however, be very marked without any symptoms of acromegaly, and therefore presumably without implications of the pituitary body. The fibres in the chiasma are decussating, direct, and intercerebral.

About 80 per cent. of the retinal fibres pass through the lateral geniculate body, the other 20 per cent. go to the nucleus of the pulvinar of the optic thalamus. The geniculate fibres are directly associated with vision. Those that pass through the pulvinar (which is closely allied in structure and probably in function to the geniculate body) do not go with the others to the calcarine area. They have no doubt some special function connected with sight, but they pass independently to other centres; some of them probably go to the neighbourhood of the angular gyrus. Degeneration of the pulvinar, if the geniculate bodies are intact, does not produce hemianopsia. The upper half of the external geniculate body seems to correspond with the upper quadrant of the retina.

The axis processes from the optic tracts and lateral geniculate bodies traverse the posterior end of the internal capsule at the junction of its superior and inferior laminæ behind the lenticular body, and then pass directly backward as the optic radiations towards the occipital lobe. They run along the outer wall, roof, and floor of the posterior horn of the lateral ventricle, and end in the nervous felt-work of the occipital cortex along the calcarine fissure. The occipito-thalamic radiations consist chiefly of "corticipetal fibres" for sight, but "corticifugal fibres" also pass along them to the superior brachium and quadrigeminal colliculus, and thence to the oculo-motor nerves. By Campbell these corticifugal fibres are thought to be the axones of Meynert giant cells in the occipital cortex.

If the visual region of the occipital cortex is removed on one side the lateral geniculate body of the same side undergoes atrophy, particularly in the cells. The pulvinar does not seem much altered. If the eyes are extirpated the tract undergoes atrophy in the grey matter between the cells, but the cells themselves are not affected. Lesions of the retina cause degeneration in the intercellular grey matter of the geniculate body, which is mainly composed of ramifications of the retinal fibres. The visual path has its anterior neurons running from the retinal elements to arborise in the cells of the external geniculate bodies, and from them the posterior neurons run on to nerve cells in the occipital cortex in and around the calcarine fissure. It is therefore not the retinal fibres, but the fibres of the external geniculate body that are projected upon the occipital lobe.

THE VISUAL CORTEX.

The calcarine fissure, which in man commences a short distance behind and below the splenium, was first well described by Cunningham. It consists of an anterior part or "stem," the "true calcarine fissure," which protrudes into the posterior horn of the lateral ventricle as the "calcar avis." The fissure as it passes backwards appears to bifurcate into the posterior or "retrocalcarine" and the occipito-parietal fissures; really, however, the latter is separated by the annectant cuneal gyrus, and the former by the deep anterior annectant cuneo-lingual gyrus. The posterior calcarine itself also seems to bifurcate behind into an upper and lower vertical fissure, the "fissura extrema" or "terminalis," but it is really separated from them by the posterior annectant cuneo-lingual gyrus.

If sections are made through the cortex of the occipital lobe there is seen running across the calcarine fissures, and parallel to the grey matter which covers the surface of the lobe, a well-marked easily seen white line. The line is due to the presence of a special plexus of nerve fibre running in the cortex and traceable for a considerable distance within its deeper surface. This is known as the line of Gennari. Elliot Smith has most carefully described its distributions: it stops abruptly and can be readily traced, and the area over which it passes can be easily identified. It runs in the grey substance of the occipital lobe, following the sulci and convolutions, and by means of its presence the area concerned in vision can be accurately mapped out. Though it appears as a line in sections of the brain, it is really, of course, a layer of special tissue, which forms part of the thickness of the cerebral grey matter, and lies half-way between the surface and the underlying white matter of the brain.

At the retrocalcarine fissure it is seen to line the hollow and both sides of the sulcus, and it reaches upward on the cuneal gyrus and downward on the lingual gyrus, as far as the two small sulci, which run nearly parallel to the retro-calcarine—namely, the "sulcus limitans superior" above, and the "sulcus limitans inferior" below; these meet together in the pole of the occipital lobe, and bound the area striata at that part. It is only prolonged a little to the posterior lateral surface of the hemisphere around the tip of the occipital lobe. Here it is strictly bounded by the sulcus lunatus, which is itself free of the striate tissue. The area of cortex which it involves is called by Elliot Smith the "area striata." This is the "visuo-sensory area" of Bolton, Campbell, and others, the "primordial visual area" of Flesching.

The structures concerned have been most carefully examined by Campbell, who finds that the special lamination included in the line of Gennari shows its largest dimensions at the forked termination of the posterior calcarine fissure which it surrounds, just reaching the pole of the occipital lobe, and as the length of one or other limb of the fork may be greater or less the extent of the striate tissue will also increase or diminish, not only in length but in breadth and substance. It spreads forward, bounding the retrocalcarine above and below, involving the cuneo-lingual gyri at either end of that fissure. It spreads definitely below, occupying the lingual gyrus, and it passes forward half-way along the lower border of the true calcarine fissure. Above it is well marked at the back of the cuneus, but anteriorly at the angle where the occipito-parietal sulcus leaves the calcarine it has gradually ceased to exist, and it is not found in the cuneal portion of the annectant gyrus at that part. The occipito-parietal sulcus is quite free of it, so is the gyrus fornicatus. There is no striate tissue along the upper margin of the calcarine proper. Both Campbell and Elliot Smith insist that it is only found along the lower margin. On the other hand, the retrocalcarine is extensively and completely surrounded by the stria Gennari both in man and the anthropoid apes. Elliot Smith proposes to call it the "medial intrastriate sulcus."

On microscopic examination special arrangement is found in the *visuo-sensory area*. The line of Gennari is seen to be composed of a dense network of fibres of fine calibre mingled with some larger fibres, which run horizontally and obliquely. There is marked consolidation in the line of Gennari, below it a pale-stained area with the termination of the optic fibres. The external layers of large pyramids are replaced by a layer of curious large triangular or quadrilateral-shaped stellate cells, practically distinctive of this region, and found chiefly along the calcarine fissure; they have strong processes of considerable length which pass horizontally, some of them run obliquely in the fibre plexus. In the deeper parts of the cortex the internal layer of large pyramids is modified by the presence of a layer of pyramidal cells, the solitary cells of Meynert, another important distinctive feature of the calcarine cortex.

Outside the visuo-sensory area is a border about 2 centimetres in width, the *visuo-psychic area*. It covers the cuneus above, but not the occipito-parietal fissure nor the upper edge of the true calcarine, but it occupies its lower border almost in its whole length. It passes over the back part of the collateral fissure and round the occipital lobe rejoining the cuneus above. The gyrus fornicatus does not seem to be a part of the substratum of vision.

The visuo-psychic region shows peculiarities in the histological structure; fine fibres are numerous, but they are not collected together as in the line of Gennari, nor is there the pallid zone underlying it. The external layer of large pyramids reappears and none of the peculiar stellate cells remain, but, on the other hand, some of the pyramids are much enlarged into giant cells, with several roots below and one very long-drawn-out process above. These cells are the most characteristic elements of the layer. The large cells

of Meynert are not found. The very great number both of cells and of fine fibres in this area suggests a high degree of functional activity, and through it are probably transferred the impulses, received from the parts around the calcarine, to further districts in the brain where the higher attributes of sight are located.

Dr. F. W. Mott, in his interesting Bowman lecture on the Progressive Development of the Visual Cortex, shows how the width and complication in structure of the cortex gradually increase as we ascend the animal series and how the special cells become more necessary. Thus in the hedgehog, in addition to polymorph and small stellate cells, are found occasional large pyramids. In the rabbit there is a line of Gennari, large stellate cells, and branching pyramids. Ungulates have a well-marked line of Gennari and numerous solitary cells of Meynert. In the cat there are numerous cells of Meynert, but the most striking feature is the depth of the pyramidal layer. These pyramids are also well developed in the cervical region of the cord, and Mott suggests they lie along the volitional path of the executive faculty which is exercised through the fore limb and with the help of binocular vision. The depth of the pyramidal layer increases after birth. Dr. Mott considers that the progressive development of the pyramidal layer in the visual cortex of mammals is associated with an increase in the perfection of binocular vision.

Flesching has shown by preparations of the fœtal brain how the development of different parts of the visual areas takes place. He considers that as there are many degrees of functions so the nerve fibres develop as they are required: the sensory found at birth, the motor found soon after birth, and the associated which gradually develop. Thus at birth only a portion of the fibres in the optic-thalamic radiations have acquired their myelin investment. All those that have done so come from the lateral geniculate bodies and they go direct to the calcarine fissure. Those fibres that come from the pulvinar appear to be medullated later in life and to pass outside the immediate limits of the calcarine area. Medullation of the fibres in the cortical areas occurs at different times. Thus an infant very soon sees light, but does not show that it sees an object held in front of it for some weeks, while it takes him as many months to turn his eyes to follow an object held at his side or to stretch out his hand to get it. It is obvious that the highly coördinated work that depends on sight is constantly needing the development of new cells and of association fibres throughout life, and they are far more easily acquired in early life.

The visuo-sensory area along the calcarine fissure is the primary station in each hemisphere for the reception of impressions coming from the retina through the geniculate bodies; around it is the visuo-psychic area to which these impressions are transferred; it occupies the rest of the surface of the occipital lobe, its functions being to elaborate and to interpret. If part of the visuo-psychic area is primarily diseased, there is likely to be a partial hemianopsia complicated by slight peculiarities of vision more or less indefinite, some difficulty in memory of words, some form of letter, word, or mind blindness. When the fibres that go to the temporal region are affected, there may be word deafness, or loss of power in the musical faculty, to recall names, or to read aloud. The psychic cells are associated with the psychoic-motor, where the impressions or information gained by sight are transferred for purposes of thought, speech, or action, and these with the emissive motor by which speech and writing are affected. The centres for these latter acts lie adjoining those for the simple movement of the lips and hand.

The various parts of the visual cortex are connected by short association fibres almost infinite in their distributions. Adjoining the occipital lobe and continuous with its lateral portion is the angular gyrus which appears to be a higher visual centre of some importance, probably developed mainly on the left hemisphere. The angular gyrus might be readily associated with the primary visual areas by means of fibres running through the occipital lobe, or with the pulvinar or elsewhere by association fibres.

The central sulcus of each hemisphere separates the motor area (frontal) in front from the sensory area (parietal) behind. The intraparietal sulcus runs upward almost parallel behind the central (inferior and superior post-central); it then turns horizontally backwards parallel to the upper margin of the hemisphere and terminates in the occipital lobe behind. It separates the post-central region of common sensation, and the superior parieto-occipital gyri from the supra-marginal and angular gyri; these two latter are probably the centre for the recognition of higher, more elaborate forms of sensation and of sight and hearing.

In cases of visual hallucination the angular gyrus is perhaps usually, but not always, affected. The supra-marginal may be the seat of mischief or the posterior parietal lobule. A case of scar after injury over the region of the angular gyrus on the right side was associated with epileptiform attacks on the left side, preceded with bright red flashes of light and succeeded by visual hallucinations. Mr. Gould trephined with cure. In a case of MacEwen injury to the side of the head had produced melancholy and homicidal impulses; there was no damage to the outer part of the skull, excepting a slight depression behind the angular process of the frontal, which could not account for the symptoms; no motor phenomena were present. It was discovered that directly after the accident and for some time since the patient had suffered from psychical blindness. The skull was trephined over the angular gyrus, and a portion of the lateral table was found pressing upon the posterior portion of the supra-marginal convolution, a corner of it embedded in the brain. This was removed with relief to his mental condition.

Distant regions are connected with visual areas by long association fibres, some of which are arranged in well-defined bundles. *The perpendicular fasciculus* connects the superior occipital and parietal gyri above with the inferior occipital and fusiform below, and with the temporal. *The superior longitudinal fasciculus* joins the frontal lobe with the occipital, and, Mott believes, through the large pyramidal cells of the visuo-psychic area. *The inferior longitudinal* runs along the outer wall of the posterior and inferior horns of the lateral ventricle, and probably connects sight with hearing, though the fibres may be for projection rather than for association, and connecting the occipital cortex with the optic thalamus. Many fibres connect the neighbourhood of the calcarine with the angular or marginal gyri, and interference with these fibres might produce typical abnormalities in sight. *The fasciculus occipito-frontalis* runs below the corpus callosum external to the lateral ventricle, and connects the convex surface of the occipital lobe with many parts of the frontal. The splenium is the commissure of the occipital lobes, and connects one visual area with the opposite occipital cortex. *The occipito-thalamic radiation* contains two sets of fibres. The centripetal run towards the occipital cortex to produce vision, and impulses are transferred by the centrifugal from the cortex to the lower parts of the brain to assist the sight by causing movements of the eyes.

VISUAL REFLEXES.

The pupil reflex passes through the lower centres, corpora quadrigemina, and third nerve; it is quite unconscious and does not reach the cortex of the brain. But pupil movements are also controlled by impulses centrifugal from the visual cortex through the brachium superius and the quadrigemina.

Many of the simpler and most constant movements that occur in association with sight are automatic, practically reflex, such as involuntary movements starting from the occipital lobes, as in blinking of the eyes on looking towards a sudden light, or to moving objects. Wide movements of the head and limbs are constantly necessary, such as avoidance of obstacles, and become visual reflexes of varying complexity. For them associated fibres run from the visual cortex to the motor centres from which the movements emanate; some of these tracts are in such constant coöperation that the associated movements become a kind of compound reflex action gradually evolved by constant use. Eye movements intimately associated with the most complex mental activities are most of them involuntary and unconscious; consciousness is alone concerned with the result affected.

The visual centres are undoubtedly reached by other afferent impulses than through the eyeball and retina alone. Pupil action and accommodation, and muscle sense produced by movements of the eyes in any direction or in convergence, cause simple impulses towards the brain. Visual judgments also largely depend on impressions from the sense of touch, and as almost every movement of the body is guided by sight the associations around sight are very wide indeed.

When the sight is lost from defects in the *eyeball or optic nerve* almost all other impulses, from hearing, touch, muscle

balance, &c., are effectual in stimulating a healthy visual cortex, and they become increased in influence to the help of faulty sight. But *defect in the visual brain* is a much more serious matter, and if the sensory area is damaged by disease some part of the psychic area is likely to be affected with it.

EVIDENCE FROM POST-MORTEM EXAMINATIONS.

We cannot overrate our obligations to Ferrier for his early experimental research work on the brain and for drawing attention to the importance of the angular gyrus and of the neighbourhood of the occipital lobe in visual processes, nor to Schäfer, Horsley, and others. Bolton examined in serial sections the occipital lobe in five cases of old-standing blindness and in one case of anophthalmos. In all he found changes in the cortical area throughout the line of Gennari, with marked atrophy of the fibres and of the cells, especially of the large stellate cells. The line was much diminished in thickness but not absent (perhaps from the presence of fibres running from the occipital lobe through the splenium to the opposite of the brain).

A very important paper published by Dr. H. M. Turnbull in *Brain* (1904) on "Bilateral Loss of Post Central Cortex" described with great detail a case of bilateral cystic degeneration of the occipital lobes and of the neighbouring cortical areas on both sides of the brain, and the consequent absence or deterioration of the optic radiations and optic tracts with the structures associated with them in the sense of sight. The patient died at 24 years of age from severe burns in the London Hospital, January, 1903, under Mr. Moullin. As a baby she was noticed not to follow anything with her eyes—she simply stared straight ahead with them. They were fine eyes and did not squint. She was taken to Moorfields and found to be quite blind. The notes then made were unfortunately not available after her death. She was very peculiar and of uncertain temper. Her powers of hearing, taste, and smell were very good. She could speak with a limited degree of intelligence. Her powers of locomotion and her common sensations were very imperfect. She never showed signs of seeing anything, never examined anything with her eyes, never watched objects moving about the room. After death the brain was removed and most carefully investigated. About the posterior third of each hemisphere was found to form a cyst with thinned walls. The cavity included the posterior horn of the lateral ventricle and part of the middle horn. The cortex involved was that of the occipital lobes (excepting a small portion of the lingual lobule), the cuneus and nearly all the precuneus, most of the parietal cortex, and the angular gyrus. The proper structure of the wide area of the visual cortex and its surroundings was completely destroyed. The posterior part of the corpus callosum was much reduced in size, and the splenium was represented by a mere cord.

(The splenium is the commissure for the occipital lobes, and sends into each a large mass of fibres known as the forceps major, while the tapetum spreads from it over the lateral ventricle. Déjerine had shown that fibres pass in the splenium from the posterior portion of the median surface of the hemispheres from the occipital pole, from the cuneus, the lingual and fusiform convolutions; and Ferrier also found that fibres pass from the lateral surfaces, the external occipital convolutions, and from the angular gyrus to the splenium.)

There was no trace of the fibres of the optic radiations and the retrolentiform portion of the internal capsule from which they pass was extremely atrophied or almost absent. The optic chiasma in front was small and flattened out by pressure from the distended dropsical third ventricle. The optic nerves and tracts were small. (The small middle root of the optic tract was present; it passes to the medial geniculate body, and by the brachium inferius to the inferior colliculus of the corpora quadrigemina and is concerned in hearing.) The lateral root of the optic tract was very small, and the lateral geniculate body through which most of the fibres pass was very much atrophied; no fibres could be traced into it from the retina nor from the brain. The other 20 per cent. fibres of the lateral root was much better defined; it passed upward to the pulvinar and to the superior quadrigeminal body. The pulvinar was only very slightly deficient behind; otherwise the optic thalamus seemed well developed, as were also the quadrigeminal bodies, though somewhat compressed. Though concerned in vision, these parts are not directly associated with the visual area in conveying impulses for the primary sensation of sight.

A very large number of cases of varying types of hemianopsia have been investigated, but the deductions drawn between the faulty area of vision involved and the precise locality of the disease, found in the occipital lobe after death, are not by any means conclusive or uniform. Many forms of pathological mischief have caused the changes in the brain tissues: hæmorrhage, gumma, tubercle, softening from embolism or thrombosis, abscess, tumour, &c. The secondary area involved around the actual lesion is in many of them very wide and irregular, and even when thrombosis or embolism of the calcarine artery or its branches has taken place the district affected is more or less wide in extent, and changes are produced not only in parts of the visual cortex but in the underlying fibres of the optic radiations and in the neighbouring tissues.

A lesion involving the occipito-thalamic radiation anywhere between the passage of the optic fibres from the retrolenticular portion of the internal capsule or from the lateral geniculate body to the centres in the visual cortex would produce a hemianopsia, varying in degree and permanence according to the position of the fibres involved and the nature of the lesion. Several cases have been published where the mischief has been limited to some part of the optic radiation, without implication of the cortex. The radiation fibres, without being the primary seat of lesion, may become affected from without, and a hemianopsia may result by their secondary implications where no part of the visual cortex or tracts is itself affected. But in cases of uncomplicated hemianopsia some primary damage on the mesial aspect of the occipital lobe in the neighbourhood of the calcarine fissure has usually taken place.

Henschen insists that the primary half-vision centre is along the lips and depth of the calcarine fissure, especially of its anterior two-thirds. He considers that the upper and lower quadrants in the visual field (lower and upper parts of the retina) are associated with the structures that occupy the ventral and dorsal areas respectively of the calcarine fissure. The dorsal part of the visual cortex, the cuneal lobe, and dorsal portions of the optic radiations are concerned with the lower quadrants of the field of vision, while the upper quadrants of the visual field are associated with the lingual and fusiform lobes and the ventral boundary of the calcarine fissures and the optic radiations associated with them. In a case of complete hemianopsia under his care there was found in the opposite occipital lobe softening produced by thrombosis. It was confined to the cortex along the calcarine fissure, lying deep in it and giving rise to slight secondary degeneration of the optic fibres beneath.

Wilbrand states that the lower lip of the calcarine corresponds with the upper quadrants of the visual fields. The following is Hun's case.[1]

A man, aged 57 years, was suddenly seized with slight cerebral symptoms. The fields of vision showed a complete left lower quadrant bilateral hemianopsia, the upper left quadrant being also slightly narrowed at the periphery; the charts of vision did not alter for nearly two years. Then he died. There was found on the mesial surface of the occipital lobe a localised atrophy involving the lower third of the cuneus, bounded below by the calcarine fissure and in front by the parieto-occipital.

In other cases such definite division cannot be made out. A thoroughly reliable case of quadrantic hemianopsia was published by Dr. Beevor and Dr. Collier.

A patient, aged 55 years, was under their observation for nearly two years during which his illness lasted. Careful perimetric observations were repeatedly taken, and a most thorough examination with exhaustive report was made of the brain structures after death. His only general symptoms were numbing of the left hand and arm, severe recurring occipital headache and faulty eyesight, and at long intervals two or three fits. The optic discs were pallid and there was some sclerosis of the retinal arteries. His central vision was 6/9 in either eye; he was completely blind in the upper left quadrant of both visual fields with some general narrowing of the fields. For two months or so before he died his health failed rapidly and his sight got worse. There was found occlusion of the right posterior calcarine artery, with destruction of the visual cortex involving the whole depth of the calcarine fissure, together

[1] American Journal of the Medical Sciences, January, 1887.

with the right lingual lobe and the fusiform lobe below it. The optic radiation was not involved in the necrosis. So far we should expect the defect that was actually found in the visual field. But there was in addition damage to the lower third of the cuneal gyrus and the adjoining retro-calcarine fissure; this latter area, if Henschen's view is correct, should have caused defect in the lower quadrants of the visual field, which in this case were only slightly implicated. Mott, on examining the sections, showed a patch of healthy striate cortex along the upper lip of the calcarine and in the adjoining surface of the cuneus, which he thought accounted for the retention of vision in the lower fields.

Again, by far the greater part of the disease lay in and around the lingual lobe, but the defective field area is not confined to the upper quadrants; it shows definite narrowing of the lower fields as well. Besides, it would seem possible that the upper part of the cortical lesion came later in the disease, after the patient was too ill for further perimetric testing, and when possibly the lower quadrant had become defective from the cuneal disease above.

The cortex lining the calcarine fissure was necrotic, and yet the hemianopsia was not complete. Can the calcarine then be looked upon as the primary half-vision centre? For there was not complete hemianopsia in this case. We must admit the importance of considering not only the amount of mischief done in the cortex, but also the extent to which the radiation fibres are affected. For, as the authors suggest, there may be considerable overlapping in the cortical supply of the various parts of the retina and considerable power of compensation for local damage in the cortex limiting the lesion.

It seems to me probable that the centre for complete hemianopsia lies more anteriorly in the optic radiation near the calcarine proper rather than in the post-calcarine, which was the sulcus here implicated, or else that the optic radiations must be involved when the hemianopsia is complete. And I suggest that the further forward towards the splenium the mischief is, the greater the number of fibres likely to be involved and the wider the hemianopsia, while the more posterior the lesion the more numerous the subdivisions of the artery, and the more localised the area of faulty blood-supply is likely to be and the smaller the defect in the field.

An important means for localising intracranial mischief is the use of the perimeter to ascertain the condition of the visual field and its defects. It is certain that hemianopsia may occur without being necessarily an early symptom of further brain trouble. I have seen a number of patients who with more or less defect in the visual fields have been able to do useful work apparently without discomfort, and who have remained without any other evidence of disease for many years. The common cause in localised cases is, I expect, embolism of some twig of the calcarine artery. The onset is usually sudden, the patient has slight brain disturbance for some days, and then recovers. The obstructed area undergoes atrophy and causes the patient no discomfort except his loss of localised visual area. But hemianopsia may be a part of a spreading lesion, the first symptoms of a thrombosis which will lead to a progressive softening; or of a commencing tumour, which causes pressure upon some part of the visual cortex or radiations, or upon the optic tract.

Trephining made safe by antiseptics may be necessary in primary injuries; for fracture, abscesses, hæmorrhage, and discharging cortical areas in epilepsy. Cysts may be relieved and old gummata removed. Cases of tumour will die if not interfered with, and though some may be malignant and too deep for removal, still others may be on the surface and more easy than might be expected, while, on the other hand, necropsy may show that operation would have saved the patient.

For the study of the blood-supply to the brain structures concerned in vision I would refer to the splendid work of Dr. Beevor.

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The Hughlings Jackson Lecture

ON

SPECIAL SENSE DISCHARGES FROM ORGANIC DISEASE.

Delivered before the Neurological Section of the Royal Society of Medicine on Nov. 25th, 1909,

BY SIR WILLIAM R. GOWERS, M.D. LOND., F.R.S.,

CONSULTING PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL, LONDON; PHYSICIAN TO THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN-SQUARE, W.C.

MR. PRESIDENT AND GENTLEMEN,—To deliver the Hughlings Jackson lecture is a task equally pleasant and difficult. Its pleasure and its difficulty arise from the same source. The object of the lecture is to honour the distinguished worker who is still with us by an attempt to promote the researches which have thrown such bright lustre on his name, and, if it be possible, to carry a step further the results he has reached, or at least to provide the means that may enable others to achieve this result. But to make such an effort is to realise its difficulty. Knowledge grows most slowly, for the essential facts are rare, and those already gathered have been made to yield their lessons by the Master himself, beyond whom we cannot hope to go. I fear, therefore, my attempt will involve disappointment to you and to myself.

The subject to which I propose to limit my consideration is the symptoms of epilepsy which are related to the so-called special senses, those of smell, vision, hearing, taste, and perhaps touch; and especially the indications of such epileptic symptoms as are occasionally presented by organic disease. Examples of such epileptic discharges from organic disease, demonstrable in nature and seat, are not common. It is important to lose no opportunity of examining carefully such as are met with.

OLFACTORY.

Anatomically, the special senses begin with that of smell, and the olfactory discharges were the first to receive special study from Dr. Hughlings Jackson, whose analytical observation has exerted a fascinating and inspiring influence on workers in every country. He published a paper calling attention to their complex and instructive peculiarities as long ago as 1866, a paper that was referred to and quoted by Sander of Berlin in an account of a fatal case published in 1874, when he also considered the few cases he had been able to find recorded by previous writers. Dr. Hughlings Jackson returned to the subject again and again in penetrating discussions of individual cases, especially in 1899,[1] in a paper in which Dr. Purves Stewart described six fatal cases that had been published by Hughlings Jackson and Beevor, Hughlings Jackson and Colman, Anderson, Nettleship, Sander, and McLane Hamilton.

Another case was published by C. K. Mills in 1908,[2] who also added two others described by Linde[3] and by Southard,[4] raising the number to nine. Two cases had been published by Dr. T. Buzzard in 1906[5]; although in one of these there was no post mortem, the nature and seat of the disease were ascertained by surgery, and it is therefore deserving of inclusion. I have two other fatal cases to describe to you to-night, and I find that Sander, in addition to his own case, quoted two others, one by Lockemann[6] in 1861, and another by Westphal[7] in 1863.

The case described by Dr. Buzzard was a girl, aged 21 years, who was found to have a tumour in and about the right hippocampal gyrus, which had destroyed the uncus and had filled the descending cornu of the lateral ventricle. It had

[1] Brain, 1899, vol. xxii., p. 534.
[2] Mills: Journal of the American Medical Association, Sept. 12th, 1908.
[3] Linde: Monatschrift für Psychiatrie und Neurologie, Band vii., No. 1, p. 44.
[4] Southard: American Journal of Insanity, April, 1908.
[5] Buzzard: THE LANCET, June 30th, 1906, p. 1807.
[6] Lockemann: Zeitschrift für Rationale Medicin, Band xii., 1861, p. 340.
[7] Westphal: Allgemeine Zeitschrift für Psychologie, Band xx., 1863, p. 485.

given rise to a prolonged sensation of a bad taste in the mouth and of a sound of bells in the head, but neither associated with her epileptic attacks. Dr. Buzzard also mentioned that the case, in which the lesion was revealed by surgery, had at first a frequent subjective sound like the loud clang of a piano, accompanied, after a time, by a very unpleasant smell and a keen sense of reminiscence. A glioma was found infiltrating the base of the right temporal lobe, but the operation was not long survived, and no post-mortem examination was allowed.

Lockemann's case was that of a woman, aged 55 years, who died from a malignant tumour of the brain, which extended from the left frontal lobe to the olfactory region, and caused for a time peculiar olfactory warnings described as variable and not unpleasant. That of Westphal was a syphilitic nodule in the pia mater beneath the frontal lobe which had destroyed the right olfactory lobule and caused a very offensive smell as the warning of epileptic fits.

The case which I have specially to describe is that of a man, aged 37 years, who was admitted to the National Hospital for the Paralysed and Epileptic early in 1905, having suffered for three and a half years from frequent slight attacks, of which several occurred daily, often four or five. In these there was first a smell and taste of gas; he could not compare it to any known odour, but it seemed to be something like sulphuretted hydrogen. It caused salivation and eructation from the stomach. The flow of saliva was so abundant that it would run from the mouth and often filled a tea-cup. After the sense of smell he had a slight sense of turning, and if he walked he had a tendency to walk fast, almost to run. Each attack lasted from one to three minutes. Consciousness was not lost. He occasionally had a more prolonged sense of the same odour. He was a well-developed man, and his mental state presented no abnormality. His smell was defective, especially on the right side, but did not seem to be lost. There was almost complete left hemianopia. The right half field was restricted in the upper periphery, especially in the right eye. The left optic disc presented papillitis about four disc-breadths in width, but with only slight swelling (2 diopters). The right appeared normal. The only morbid appearance it presented was a little capillary redness in the upper part. Hearing was good on each side. The tongue and throat presented no symptoms. The strength of the left hand seemed a little diminished. Both knee-jerks were brisk, but there was no foot clonus. The left abdominal reflex was slighter than the right. He had only occasional headache, not severe. There was marked tenderness to firm pressure on the right side at the temporal and lower part of the parietal region. No sound could be heard on auscultation there.

In February he was operated on by Sir Victor Horsley. The right parietal and temporal regions were exposed. The brain was bulging, but no tumour could be seen on the surface or on raising the temporal lobe, but this was firmly adherent to the dura mater near the tip. An oblique incision into the substance of the lobe revealed an infiltrating growth near the anterior extremity, which could only be partially removed in pieces. Hæmorrhage occurred from many vessels, which had to be tied. The operation was borne badly and the patient died a few hours after its completion. At the necropsy it was impossible to discern the precise size and position of the growth in the temporal lobe. It was found to have compressed the chiasma and right optic tract; it was continuous with a mass of similar growth in the white substance of the frontal lobe. The growth was a glioma.

I shall have presently to describe other cases in which the fits were preceded by an auditory warning at first, and subsequently by an olfactory aura, consequent on the descent of a growth towards the apex of the temporal lobe.

Twelve of the cases were so extensive as to have no precise localising value. Of these, 11 were of tumours and 1 of meningitis; another, that of Westphal, had apparently produced the symptom by destruction of the olfactory bulb and tract. There was extensive meningitis in the case of Southard, but there was also an aneurysm, which had destroyed the uncus. In only one case was there an isolated lesion of this structure, a small spot of softening within the uncus, and in this case, described by Hughlings Jackson and Colman, there were no sensations of smell, only the movement of the mouth and jaws which is so suggestive of a sensation of taste. It was present also in the case of Southard, in which the uncus was destroyed by an aneurysm. Although the symptom is probably a distant secondary effect, and is present in many cases in which there is no evidence of disease in this region, we are almost compelled to regard it as evidence of a gustatory sensation. We must remember, however, that Dr. Hughlings Jackson, in proposing the name "uncinate epilepsy" for these attacks with an olfactory or gustatory aura, expressly disclaimed suggesting more than the general region, traversed by the olfactory roots, as the seat of disease. Where these fibres end, in the various structures they penetrate, remains to be discovered. A putrid odour was occasionally described. Regarding this, caution is necessary when it does not attend other distinct epileptic symptoms. It may be an isolated manifestation of suppuration in one of the nasal sinuses.

Several features frequently attend these cases of epileptic attacks with an aura of smell, but little can be added to the instructive discussion they have received from Dr. Hughlings Jackson. I may mention that he has called attention to the observations of W. G. Spencer[8] on the arrest of respiration at the end of inspiration, produced by stimulation of the anterior perforated spot, over which passes the outer root of the olfactory tract and into which some of its fibres pass, as explaining the sense of dyspnœa occasionally associated with an olfactory aura. We are reminded of it by some cases of apparently idiopathic epilepsy. For instance, in one a sense of dyspnœa seemed to have a nasal origin. The first thing was a stifling sensation in the nose, as if the patient could hardly breathe, followed by a sudden sense of a peculiar momentary bad smell.

The psychical condition which often attends the slighter attacks in cases in which there is an olfactory sensation has been termed the "dreamy" state. There seems to be only a partial impairment of consciousness, or the loss of this occurs so slowly that a distinct recollection is retained of the transient sensations which precede it. The term "dreamy" is often spontaneously applied to the memory of other slight attacks, especially to those in which some definite sensations are experienced. So also with the impression of recurrence, or of precurrence, it might be more accurately termed: the clear conviction that the same feeling has been experienced before. This is a phenomenon of normal brain states, or presumably normal, as Oliver Wendell Holmes has so well impressed upon us in his "Autocrat of the Breakfast Table" in connexion with Day and Martin's blacking. Much more strange, and at present beyond our power of conceiving an explanation, is the sense of dread, intense and causeless, which has been marked in several cases.

In ordinary epilepsy we sometimes meet with a slighter sensation of smell associated with other deliberate sensory perceptions. In one case the sound of bells, with red and blue lights, was followed by a distinct putrid odour. Another patient always had a peculiarly complex aura, a sensation in the left hypochondriac region seemed to ascend the left side of the thorax in a jerky motion, and, at the clavicle, it became a sound and could be heard as well as felt; when it reached the level of the ear it was like the hissing of a railway engine. Then he suddenly saw an old woman in a brown dress, who offered him something that had the smell of Tonquin beans. The woman then disappeared and two round lights appeared before him, which got nearer and nearer with a jerky motion, and he lost consciousness. The warning was always the same, in every detail. Such cases are, doubtless, due to a secondary involvement of an olfactory centre in a discharge beginning elsewhere, and spreading widely but slowly.

AUDITORY.

Organic disease sometimes causes attacks in which the warning is a subjective sound. As might be expected, the cause is generally a tumour of the upper part of the temporal lobe, often subcortical, beneath the first temporal, in which experiment indicates the situation of the auditory centre. But it will be remembered that extirpation of this has never been followed by permanent loss of hearing, neither has this result usually followed enduring destruction of this region by disease in man.

The effect of a tumour in the region was shown by the case recorded by Dr. Buzzard, which I have already mentioned.

[8] Proceedings of the Royal Society, 1904, p. 61.

It is noteworthy that the discharge of the centre is often due to a growth in the white fibres beneath. It was so in a remarkable case which came under my notice many years ago at the National Hospital, where the patient was under the care of Dr. Hughlings Jackson, who, with characteristic kindness, has placed the notes at my disposal this evening. The patient was a man, aged 39 years, admitted in November, 1875. He was a painter, but without sign of lead poisoning. There was no history of syphilis. He was left-handed, but had been taught to write with the right hand. For two years he had suffered from fits, about once a week. He had also suffered much from occipital pain, increased by a cough; there was no paralysis. For the first six months there was no warning, subsequently there was an auditory aura. The slighter attacks began by a humming sound in the left ear; those of greater severity by a loud sound like a peal of bells, also to the left. The duration of the sound was about three minutes, and it ceased before the fit began, and just before the sound ended the patient felt a burning sensation in the left external auditory meatus and concha, like the contact of hot coal. The burning sensation then passed down the left side of the neck, and round the back of the neck to the right ear, and also across the forehead. The burning then passed down the thorax front and back, to the leg and foot, where it became a numbness. After the leg, the sensation passed down the arm to the hand. From the onset there was intense frontal pain. The head shook rapidly from side to side, and the eyelids were quivering; sparks also appeared before the eyes, always yellow. At the onset of the burning heat the face became drawn towards the left by tonic spasm, and afterwards there was trembling of the limbs of both sides. In other attacks of the same character the arm was affected by the sensation before the leg, and his description was that the arm seemed as if lying in a bed of stinging nettles. The attacks were always followed by intense headache. When admitted, the optic discs were normal, but in three months optic neuritis slowly developed. Soon afterwards left hemianopia came on, the loss almost reaching to the medial line. The fits he had in the hospital were less frequent and generally slight. Each was followed by transient weakness of the left side, the only paralytic symptom. His headache improved. After six months he went out and returned at the end of October, 1876. The fits had continued, many had occurred without warning; but those which he had after readmission presented the same aura, the sound of a peal of bells, now followed by pain at the back of the left hand, which passed up the arm to a little above the elbow, and was then felt in the left side of the face. Tingling followed in the left lower leg, and passed up the thigh; then he fell unconscious. The arm was the seat of constant tremor, which was present also in the leg when he was sitting, but ceased when he stood. It began suddenly in June, in a violent form, soon after rising. In the arm it was coarser than in paralysis agitans, and involved all the joints, but was greater in the wrist and fingers than in the elbow or shoulder. A movement stilled it for a time, but it soon returned. The left arm had become distinctly weak; the grasp was 35 with the right hand, and only 10 with the left; the leg seemed strong. The optic neuritis was subsiding, and vision was considerably impaired.

He did not then stay long in the hospital, and the notes are brief, but he was again admitted in October, 1878. Continuous occipital headache still troubled him. Left hemiplegia had gradually developed and had attained a considerable degree. The neuritis had led to consecutive atrophy with still more impairment of sight, greater in the right eye. The left hemianopia persisted. Hearing was noted to be good on each side; smell also was good and equal; taste seemed diminished. His fits had become less frequent and many appeared to have been bilateral. He still had frequent severe occipital headache. Many fits occurred after he returned to the hospital; the description of them in the notes never now mentioned an auditory aura. In those that were severe the convulsion was bilateral, but more severe in the left side.

In the beginning of 1879 sight had almost completely failed. Movement of the eyes to the left was attended by nystagmus. Hearing was impaired on the left side, the watch not being heard at all, while it was clearly heard on the right. The left arm was quite powerless; the leg could still be moved, although feebly, but it was not rigid. The right leg could be moved freely. Sensation was not much impaired in the left limbs. The occipital headache was slighter, but it afterwards again became severe. During the next few months he had an occasional slight fit, and then continuous delirium set in. His wife was dead, but he asserted that he could see her practising prostitution with other patients in the ward. He was almost blind, but when assured that it was not so, his reply was, "Do you think I cannot believe my own eyes?" In August there was alternate convulsion in the right and left side of the face, and then a severe convulsion on the right side. In September the delirium ceased. Smell was noted to be still deficient, but "better on the left side than on the right." Occasionally, however, he had an unpleasant subjective smell "like a strong liniment, almost taking his breath away." On the right side hearing was still good, and on the left the watch could be just detected in contact; there was often subjective ringing. Taste was slow; occasionally a subjective bitter taste was experienced. Sight was practically gone; occasionally he still had subjective sparks to the left. The chest moved well on the right side, very little on the left. He spoke at first in an audible tone, but his voice soon died down to a whisper. The left arm was powerless, with no rigidity, but he complained of a dragging pain in it, and if moved away from his side he could not tell where it was. The right arm was moved freely, but was too feeble to act on a dynamometer. The left leg was powerless but without rigidity, and passive movement caused much pain in it. The right could be well moved. The right knee-jerk was present, the left very slight, and the attempt to obtain it caused pain. There was no foot clonus. He continued in this condition, having a few fits, generally slight. In one, the convulsion was in the right arm and slightly in both legs. On Dec. 7th he died suddenly.

Post-mortem examination.—A tumour was found in the right hemisphere, but no morbid process in the left, or in the pons. The growth lay between the optic thalamus and corpus striatum on the inner side, and the convolutions of the temporal lobe on the outer. It was almost confined to the white substance, ceasing about a twelfth of an inch from the grey substance of the temporal convolutions and of the island of Reil, but it had invaded the outer segment of the lenticular nucleus behind the middle of the corpus striatum, and compressed the other segments. It had also invaded the posterior extremity of the optic thalamus for one-eighth of an inch only, and the thalamic substance was softened in an area of a quarter of an inch, just behind the anterior extremity. A tongue of growth appeared at the base between the crus and the uncinate gyrus, which was displaced outwards but not invaded superficially. It had compressed but not invaded the optic tract almost up to the commissure. Behind, in front of the corpora quadrigemina, the growth had invaded the crus in an area the size of a split pea, and thence had passed into the anterior, and slightly into the posterior, right quadrigeminal bodies, but had not crossed the middle line. The anterior limit of the growth was the neighbourhood of the grey matter of the convolutions of the island of Reil. The highest level it reached was a little above the floor of the lateral ventricle outside it. It had filled the descending cornu and extended beneath the anterior half of the posterior cornu, where it ceased by a rounded end, which was separated by a thin layer of softening from the cerebral substance. Nowhere else was there this separation. This growth was, for the most part, similar to the appearance and consistence of the grey matter of the cortex. An exception was presented by the region between the posterior part of the optic thalamus and the temporal cortex; here it was much firmer, and almost cartilaginous in consistence, yellowish in tint, and it contained several small irregular cavities. It was evidently the oldest part of the growth. The structure of the tumour presented the aspect of a glio-sarcoma. It was composed of small oval cells, with a few fibres.

The features of this case are of great interest. The earlier fits must have been due to discharges in the right hemisphere, beginning with the auditory centre, as the result of the growth in the white fibres beneath it. Although the cortical centre would be isolated, the discharge would affect consciousness as a sound, and extending to the motor region, which was not isolated, would cause convulsion on

the left side. But before the convulsion the discharge seems to have spread to the centre for common sensibility in the ear, the external auditory meatus and concha, and thence to that for the neck and the trunk, and the left limbs. The discharge in the centre for common sensation in a special sense organ, as well as the special sense itself, is rare, but is occasionally met with in epilepsy. I have not otherwise met with it as a consequence of organic disease. It is, perhaps, intelligible in relation to the auditory centre, because the vibrations of touch stand in so close a relation to those of sound. Lastly, a feature which is difficult to explain is the final convulsions on the right side, for which no explanation could be found in any lesion in the left hemisphere. We must consider that they were produced by the tumour in the right hemisphere acting on the left cortex through the fibres of the corpus callosum.

Dr. Colman,[9] in a very instructive paper on hallucinations produced by organic disease, has published an account of a case of a tumour of the lower part of the central convolutions and the adjacent first temporal on the left side, in which there was the sound of bells in the right ear and afterwards a pleasing hallucination that a musical box was constantly playing. Dr. Colman has also referred to the case of a Jewess, of Odessa, who was subjected by her husband to blows on the head, which amounted to a rough physiological experiment, the results of which were described by Thomaschereski and Stamonowitsch in 1899.[10] Congestion of the cranial bone, thickening of the dura mater and pia mater, and inflammatory tissue beneath the latter, with changes in the cortex, were found over part of the right central convolution, the posterior half of the first temporal, the supra-marginal and the angular gyrus. She suffered from convulsions, chiefly left-sided, and persistent auditory sensation on the left side, as well as left-sided visual hallucinations.

Last year, an Italian widow, aged 39 years, was under my care at the hospital with symptoms of a tumour of the temporal lobe, double optic neuritis, headache, and convulsions, some preceded by the sound of a bell ringing on the left, by a very offensive smell, and the vision of a strange woman. Her case was especially fixed in our memory by the fact that she was quite willing that her head should be opened, but she had a profund objection, at first insuperable, to the removal of her hair; she consented only on the assurance that it need only be taken off on one side, and that it would surely grow again. Sir Victor Horsley operated in July. A round encapsuled tumour, subcortical, was found in the temporal lobe; it reached down almost to the uncus. It was shelled out, through an incision, with as little injury to the brain as possible. She had afterwards slight left hemiplegia and diminution of sensation, but she left after two months, rapidly becoming well. Her only subsequent fits were on the day of the operation, and in these the previous aura, the offensive smell, and vision of a strange woman, occurred after the cessation of ten minutes' spasm of the left arm, not before the motor convulsion. These warnings had occurred only for a year and a half, when the fits had been more frequent, but the first fit was when aged 14—a month after her marriage—and they had occurred two or three times a year ever since, with tongue-biting and micturition, quite similar to those of the last year. No family tendency could be heard of. When aged 19 she had a small tumour removed from the breast. The cerebral tumour was thought to be a glio-sarcoma; its structure suggested a long duration, and it may well have been present at the time of the first fit and have caused the convulsions, which were only associated with the auditory and olfactory warnings after it had attained a considerable size.

The reverse is the case with a woman who has just undergone the first stage of operation (on Tuesday last). Her age is 35 years. Fits have occurred for seven years, and were associated, long ago, with a smell of rotten fish and also the sound of a voice, but these have been absent now for several years. Their cause may be learned next week.[11]

VISUAL.

Discharges in the visual centre seldom result from organic disease; the half-vision centre in the occipital lobe is still the only one generally recognised. Many years ago I suggested that the symptoms of disease give weight to the experimental conclusions of Ferrier, which indicated that the region of the angular convolution between the parietal and occipital lobes has a visual function. The facts suggest, I think, that this region is connected with both half-vision centres in a complex way, so as to represent the visual function of both eyes, but of the opposite eye to a greater extent than of the eye of the same side. Partial disease of this centre seems to lower its function as a whole. In the hemianæsthesia of hysteria this centre seems to be put out of action, and the effect on vision is well known. Such an hysterical condition is commonly regarded as not worthy of consideration, but functional states are the only evidence we can obtain of some arrangements in the central nervous system; a similar condition of vision may result from an organic lesion.

Some of the preliminary spectra of migraine can be best understood on the assumption that they depend on a slow discharge in this higher visual centre, on the side in which the subsequent headache is felt, especially those that have the form of what is termed the "angled fortification spectrum." The inhibition which accompanies the spectra seems sometimes to be seated in this centre, sometimes in both (when there is a central loss), sometimes in the related half-vision centre. But it is remarkable how very seldom inhibition of the latter forms part of the warning of idiopathic epilepsy.

I must not allow myself to be led into a discussion of functional affections, but I have to describe some cases of organic disease involving the angular gyrus and causing visual symptoms, cases which seem to afford definite support to the opinion I have put forward. The first case is that of a man, aged 45 years, who is left-handed, and thinks he became so, except for writing, in consequence of an accident to the right hand at the age of about 10 years. He has served in the navy for 20 years, and during that time he had many blows on the head. He denied syphilis, but admitted many risks. Some time in 1902 he was struck on the head by a heavy piece of coal, and in November of that year—how long after the blow he does not know—he had a severe fit, which compelled him to stay in bed five days. He remembered during this time seeing a bright, white light on his left. Subsequently he had slight attacks in which his head turned to the left and there was brief loss of consciousness. In March, 1904, he had three severe fits in one day, with convulsion on the left side and coloured lights to the left. Afterwards slighter fits occurred every few days, until his admission into the hospital in May, and afterwards.

He was a man of considerable intelligence. His smell, taste, sight, and hearing were normal, and so were the optic discs and ocular movements. The left arm was slightly weak; the grasp 75 compared with 90 on the right side, although in general left-handed. The left knee-jerk was the more active, and the plantar reflex was extensor, the right being flexor. The attacks occurred frequently, but varied much in degree. Very careful notes were taken by Dr. Gordon Holmes, who was then resident medical officer. In the slightest, the eyes became fixed without deviation. The left side of the face was the seat of slight tonic spasm, and the head turned slowly to the left; consciousness seemed dull for about a minute. In others, in addition, the left arm became rigid, the elbow a little flexed without movement of the wrist or fingers. Smacking movements of the lips terminated each attack, but no sensation of smell could be ascertained, although sometimes he spoke of an unpleasant bitter taste in the mouth.

Many attacks, especially those that were more severe, were heralded by the appearance of several small round objects, seven or ten, just to the left of the fixing point and above it. They were brightly coloured, red on the outside; within this was a zone of blue, the centre being white. They were always the same, and they moved to the left or returned in a series of jerky movements, for five or seven minutes, often longer, after being first seen. During this time his eyes were constantly being jerked towards the left. Almost immediately after the appearance of the balls, dimness developed in the left half of the field, which was slight at first, but rapidly increased in degree until it amounted to complete hemianopia, extending to the middle line, except in a small area round the fixing point. It remained complete until about five minutes after the coloured balls disappeared, when it slowly lessened. At first, soon after the disappearance

[9] Brit. Med. Jour., 1894, p. 1016.
[10] Neurologisches Centralblatt, 1889, p. 22.
[11] It proved to be a very large cyst in the temporal lobe, connected with the lateral ventricle.

of the balls, round markings of the size of the balls could be dimly seen at the place these had occupied. The passing away of the hemianopia was slow; a little dimness still remained half an hour afterwards.

In some attacks there was initial jerking of the eyes to the extreme left, and of the head, by clonic spasm. After a few seconds the spasm ceased, but presently came on again, and these recurrences went on for 20 minutes, each being attended by the noise in the mouth as if the patient were chewing; the arm and leg were rigid, and the arm was the seat of a fine tremor. In it there was complete loss of sensation, to touch and pain, up to 2 inches above the elbow-joint. The right limbs were normal. During this time the patient saw the coloured balls to the left for about ten minutes. When they disappeared the eyes and head could be moved to the right. The tremor of the arm ceased, but was replaced by irregular motion, comparable to athetosis. In a few minutes the loss of sensation had diminished, and extended only over the hand up to 2 inches above the wrist. Consciousness was unimpaired, but after an attack he frequently used wrong words in speaking which bore no resemblance to those he intended to say. Such an attack was sometimes followed by a recurrence, and in this he sometimes completely lost his sight for about a minute, when the half vision returned. Occasionally he felt only the loss of sensation in the arm, which was verified by examination, and there was extreme deviation of the eyes to the left, without the appearance of the coloured balls. The fields were many times separately taken with the perimeter and always found normal. The following note was made of his impairment in speech: "He always understands the nature of objects, and can easily express all his ideas and wants, speaking quite correctly. He understands everything said to him, even when spoken to quickly or in complicated sentences. He can read fairly well, but says it is much more difficult than it was before he became liable to fits; the effort tires him. He can see the words quite well, but has to read a sentence over and over again before he can understand the meaning. His right hand being good, he can write quite well and legibly, but complains of difficulty in expressing his thoughts in writing."

In July the patient was operated on by Sir Victor Horsley. The dura mater over the supramarginal gyrus was found on incision to be considerably thickened. It was removed. No tumour could be seen on the surface, but the pia mater was milky, opaque, and thickened, and the surface of the brain was firm and nodular, and hard to the touch. A horizontal incision was made just above the supramarginal convolution, and the substance of the brain was evidently sclerosed, greyish white, and opaque in aspect; but, though the incision was deep enough to open the lateral ventricle, no tumour was found. In the angular gyrus, posterior to the incision, a firmer patch of sclerosis was found. The operation was well borne.

One or two fits occurred each subsequent day on the left side, beginning in the face with clonic spasm. Consciousness was not lost. After a week they became less frequent. His mental state was very obtuse. During August there was steady improvement. The wound healed firmly and his fits became less frequent and ceased by the middle of the month. In the middle of September it was noted that his mental state was good and bright, but now and then he seemed to become dull and strange, as though he had a slight attack of *petit mal*. Hearing was good, and the only defect in sight was a slight peripheral restriction in the left lower edge of the field. The two knee-jerks were equal and the plantars both flexor. Spontaneous speech was quite good. He still complained of difficulty in reading and that sometimes he could not understand what he read, but he read short sentences quite well and showed that he understood them. In reading aloud he made many mistakes, especially with the longer words, and even short ones were often pronounced wrongly. Spontaneous writing was with many mistakes, which he recognised on reading it afterwards. Writing from dictation was very imperfect and long words he said he could not write, and when urged to try he was unable to produce anything like the correct word. He seemed, indeed, to produce some retained visual symbols rather than to translate the auditory symbol into one of appropriate visual character. By the middle of October all trace of hemiplegia had disappeared. He could write intelligently to his wife, but still failed in writing from dictation. He was discharged on Oct. 18th, 1904, and has since been heard of as able to pursue his work in Ireland.

The visual phenomena present in the attacks of this patient seem best explained by a discharge of the assumed higher visual centre in the region of the right angular gyrus, a discharge which spread to the adjacent motor centres, or to it from them, and also produced temporary inhibition of the right half-vision centre, which very slowly passed away after the cessation of the discharge. They show how readily the half-vision centre undergoes inhibition, and that sometimes a secondary discharge of the centre in the other hemisphere may result. This has evidently occurred when a hæmorrhage in one occipital lobe has caused permanent hemianopia, but at first complete loss of sight results by the inhibition of the half-vision centre in the other hemisphere, which, in one case I have seen, continued for a week.

Another case has been in the hospital in which a traumatic superficial lesion of the angular gyrus gave rise to fits beginning with a visual aura. The patient was under the care of Dr. F. E. Batten, to whom I am greatly obliged for the opportunity of describing it to you. She is a girl, now aged 9 years, without neurotic heredity, who when aged 3¼ fell down 14 or 15 stairs and struck her head on the stone tiles of the floor below. There was no cut or bruise of the head, and the exact place of the blow was at the time uncertain. She seemed to have no loss of consciousness. Half an hour later she had a fit, with loss of consciousness and twitching of the right side, face, arm, and leg, and she vomited several times during the convulsion. When it ceased she went to sleep, and after two hours woke up seemingly well, and no loss of power was noticed. Similar attacks recurred, and during the following year she had about 40. Then they ceased, and she was free for three years, until Christmas, 1907, when they returned, and have frequently recurred since in severe form until she came to the National Hospital on June 15th, 1909. In the hospital she had several attacks, differing in severity, but similar to those which had occurred previously. Each began with a bright light in the right of the visual field, and she always rubs the eye with the right hand, not, she says, on account of any discomfort in the eye, but to get rid of the light; the head is then turned slowly to the right and the eyes also deviate to the right. Consciousness is then lost. Tonic spasm then occurs in the right side, followed by clonic movement and twitching of the right side of the face and jerking of the eyes. The duration of the whole is two minutes. Consciousness then returns.

Immediately after the fit sight was distinctly lost in the right side of the field; it was soon regained, although for a time she said she saw objects more distinctly in the left than in the right half. Sensation in the hand was lessened to both touch and pain, and even after a quarter of an hour she complained that she could not feel the hand properly. The right plantar reflex was extensor after the fit, the left flexor, and the abdominal reflex was much less on the right side than on the left. In one severe fit there was also some spasm in the left leg. The visual spectrum, which she calls "the twinkles," always appears on the right, and she always rubs the right eye. They seem accompanied by deviation of the eyes to the right. She says the twinkles are "like stars." She once said to her father, "They are all colours, green and red and all, and there is a mist over my eye." She generally denies that the spectrum is coloured. Apart from the attacks, her physical condition seemed quite normal. Her ocular movements were perfect and so usually were all reflex actions, including the abdominal and plantar.

On July 6th she was trephined by Mr. Sargeant over the left parieto-occipital region. On exposing the brain the angular gyrus appeared paler and wider than the other convolutions, and in its posterior part was softened. On incision a dark grumous material escaped as well as some pale gelatinous substance. It seemed to be an old blood cyst. It occupied a small region around the termination of the parallel fissure. The wound healed well. The attacks, however, returned and she has been readmitted. They begin with the same visual aura, but the convulsion is now general.

I am indebted to Sir Victor Horsley for the facts of another case. An officer received a severe blow on the right side of the head in the hinder parietal region which caused fits, with a visual aura to the left. He was trephined and laceration of the surface at the region of the angular gyrus was found.

In this connexion I may refer to the case which I have already mentioned of the Odessa Jewess who had a persistent visual hallucination to the left, and the traumatic meningitis on the right side of the brain had involved the whole region of the angular gyrus.

These cases all speak with the same clear significance. It is different from the diminution of the remaining half-field in some cases of hemianopia, which was the evidence on which I relied in my Manual, as justification of the assumption in man of the higher visual function of the region of the angular gyrus. The higher the level of function the more complex its representation may be, and we may hesitate to reject entirely that of which the evidence may still seem imperfect.

LATENT CHOREA: A CONTRIBUTION TO THE STUDY OF SYDENHAM'S CHOREA.

BY REGINALD MILLER, M.D. LOND., M.R.C.P. LOND.,
PHYSICIAN TO OUT-PATIENTS, PADDINGTON GREEN CHILDREN'S HOSPITAL; ASSISTANT PHYSICIAN TO OUT-PATIENTS, ST. MARY'S HOSPITAL.

IN the most important question of the prevention of rheumatic heart disease all are agreed as to the prime necessity of the recognition of the earliest manifestations of the rheumatic infection, and to this end the possible rheumatic nature of such conditions as tonsillitis, "growing pains," and cardiac dilatation has been emphasised by many authors whose views have rightly met with almost universal acceptance. It has seemed to me that for this purpose the study of chorea has been unduly neglected, and it is the object of this communication to emphasise what may be the earliest signs of this type of rheumatism and to draw one or two deductions from the considerations put forward.

At the outset I must offer some defence for the term "latent chorea" with which I have ventured to head this paper. To it there is the obvious objection that in any patient chorea either is present or is absent; nevertheless, it is a convenient name under which to describe cases I believe to be instances of chorea, but which would certainly not be recognised as such. I shall here therefore by "latent chorea" mean such a condition as I am attempting to show to be the earliest form of nervous rheumatism, and by "chorea" the well-known disease with (amongst other symptoms) its disorders of movement, characteristic and obvious. We may perhaps with advantage study first the common symptoms which are seen in a case of chorea, noticing especially how they might be expected to appear in their slightest and earliest forms. They may be divided into motor, mental, and atonic.

The *motor symptoms* consist of the perpetual, irregular, and purposeless movements of the limbs, which have been well described as those of "exaggerated fidgetiness" (Sturges). In addition there may be noted incoördination, due in part, I think, to cerebellar involvement, which assists in rendering voluntary movements clumsy, and in bad cases quite futile. In the trunk there are seen squirming movements and often irregular and incoördinate action of the respiratory muscles, so that the breathing may be in turn thoracic, abdominal, or normal in type. Long-drawn sighs, such as are heard in nervous women, are very common. In the face the movements show themselves, as they must, in various emotional expressions, such as those of pleasure, dislike, fear, or surprise, which flit across the countenance. These may not in severe cases, as far as can be gathered, indicate any corresponding emotion on the part of the child, but often in the slighter forms of the disease they do express (or rather over-express) the mental attitude of the moment. In addition there are movements of the jaw, tongue, and lips which may cause the familiar choreic "clucking." Pupillary changes are not uncommon and are of some interest to us here. Dr. F. Langmead[1] has described hippus, inequality, and eccentricity of the pupils, and to these may be added irregularities in shape. As I have seen them these are usually found in the early stages of chorea. The displacement of the pupil, in my experience, is always upwards and inwards. Dr. Langmead pointed out that they were seen in cases of chorea, but also, although less frequently, in patients suffering from acute rheumatism but not diagnosed as instances of chorea. It must, however, be acknowledged that in nervous but non-rheumatic children these pupillary abnormalities are sometimes found, and I cannot help regarding them as evidence of nervous instability rather than of any type of rheumatic infection.

Reducing these motor phenomena of chorea down to their slightest forms, such as we might surmise to be present at the very outset of the disease, we should expect to find general fidgetiness only slightly exaggerated, clumsiness in voluntary movements (especially in the finer ones of the fingers), and unnecessary and excessive emotional movements of the face. To these might be added, perhaps, abnormalities of the pupils and the occurrence of occasional sighing respirations of a nervous type. All of these symptoms might be taken to denote merely an extremely neurotic child.

Of sensory changes in chorea I have not found more than a trace. Pharyngeal anæsthesia, the only one I have looked for often, I have noted but twice. Considering how comparatively common this is in neurotic young adults, I had expected to find it in chorea more frequently than I did. Its absence may perhaps be explained by the chronic tonsillitis and general faucial injection which are so usual in choreic patients.

The *mental symptoms* of chorea are of great importance, and it is not too much to say that they have not received the recognition that is due to them. They are so constantly present and so much a part of the disease that in many ways chorea might well be looked upon as a mental rather than a motor disease. Yet the mental side of the disease has been so neglected that some authors have gone the length of describing a condition which they term "hemi-chorea." With the severe forms of choreic insanity, such as a raving delirium, agitated melancholia, dementia or coma, we are not here specially concerned. What I wish to emphasise particularly are those slighter types of mental perversion which are seen in one form or another in all choreic children. These are mental depression, excitability, emotionalism, inattention, loss of memory, or signs of diminished control as shown by outbursts of passion, unnatural fear, uncontrollable laughing or crying. Often indeed, if the history of the onset of chorea be carefully traced, it is found that such symptoms as these are noted prior to the development of definite movements. As a rule early in the disease the mental attitude is one of depression, while during convalescence it becomes one of exaltation. This will be referred to later in the study of the nervous symptoms (latent chorea) in cases of acute and convalescent rheumatism. In their slightest forms, therefore, these symptoms of chorea would appear as those of mental instability as shown by excitability, fretfulness, inattention, and attacks of passion or crying; such symptoms as might be found in a neurotic, spoilt, but non-rheumatic child.

The *atonic symptoms* of chorea, paresis or paralysis, are usually present only in the severer forms of the disease and, as a rule, are late in their appearance. Sometimes the paralysis is so marked and accompanied by such rapid wasting as to suggest that the anterior horn cells have been attacked by the infection. I mention this because chorea is so often spoken of as cerebral rheumatism, whereas it may quite possibly be a disease of the whole of the central nervous system in which involvement of the cerebrum gives rise to the earliest and grossest perversions of function. It is obvious that the atonic symptoms in their lesser forms will not be recognisable as choreic, and thus are of no aid to us in approaching the disease from our present standpoint.

Before passing on I must make mention of some of the other signs of the rheumatic infection, particularly as they occur in cases of chorea. Over tonsillitis, "growing pains," muscular rheumatism, and subcutaneous nodules we need not pause; their significance is well appreciated. Arthritis rarely co-exists with well-marked choreic movements as has long been recognised. Perhaps this is owing to the stimulus to complete motor control set up by a painful joint.

The heart, as has been taught by Dr. D. B. Lees, shows dilatation as its earliest response to active rheumatism. This is only to be detected by careful percussion of the deep cardiac dulness. In addition the pulse is quickened and the heart excitable. Reduplication of the first apical sound is of some interest: it is not uncommon in dilated hearts and

[1] THE LANCET, Jan. 18th, 1908, p. 154.

in those of children who are nervous under examination, and where these two factors are both present, as in chorea, it is so common as to be almost the rule. Usually it passes off after a few days' rest in bed. Irregularity of the heart is very frequent in chorea, but is not so common as is the reduplicated and rather slapping first apical sound. The pulmonary second sound is usually augmented and frequently doubled. In the earliest stages of cardiac dilatation there is no systolic bruit at the apex.

Anæmia is the rule in all rheumatic infections, and it is of interest as to some extent it is an index to the progress of the case. It is very prone to remain in spite of treatment by iron should the infection be quieted but not destroyed. It is frequently seen associated with a rather characteristic pink flush on the cheek. Pain in the epigastrium or in the left side of the chest is a symptom often found in rheumatic children, and I have seen it so severe as to be the cause of the child's visit to hospital. It may occur after food but often is independent of meals. Epistaxis is not uncommon in rheumatic children with slight cardiac affections, as Dr. Sidney Phillips has pointed out.

Headache is an interesting symptom. It is, of course, a common associate of anæmia, but in children is more often than not rheumatic in origin. Goodhart[2] states that in 33 cases of headache 23 were of rheumatic stock. Most commonly this symptom is seen in the early stages of chorea, as Dr. G. F. Still[3] has noted, and so may be regarded not only as rheumatic but as evidence in many cases of an early intracranial infection. It will be remembered that Dr. F. J. Poynton and Dr. Gordon M. Holmes[4] have found vascular engorgement of the pia-arachnoid among other changes in chorea. Thinking that the headache might be due to meningeal œdema, for an excess of cerebro-spinal fluid is usually present in chorea, I tried the effect of calcium lactate as suggested by Sir A. Wright. The symptom was, however, completely unrelieved by this measure, while as a rule it is easily amenable to treatment by sodium salicylate. It is important to recognise that while headache is a frequent result of rheumatism in children, it is rarely produced in them by the salicylate group of drugs.

Sweating of the palms of the hands is very constantly seen in children with any form of rheumatism, but to a less extent is not uncommon in others as well.

I have described in some detail symptoms that must be familiar to all who have studied rheumatism in childhood, partly because any emphasis that is laid upon the fact that chorea is not a disease of the motor system alone is not amiss, and partly because in the delicate task of tracing so composite a clinical condition as this to its earliest manifestations it is necessary to put clearly what are the symptoms that might be expected to be present. It will be seen that I have for the most part omitted the occasional and rare phenomena and have referred to those which are seen if looked for in case after case.

We may expect, then, that a patient showing the earliest signs of chorea would appear to us in somewhat the following light. The child would be pale, fidgety, and in the finer movements of the limbs clumsy; he would be nervous, easily frightened and upset, affectionate but passionate when crossed, excitable but readily exhausted, unable to concentrate his attention on anything for more than a moment, and hence getting into trouble at school, particularly over his sums. The heart will almost certainly be dilated and excitable, with reduplication of the first sound at the apex and possibly irregularity of rhythm. The hands will be moist, and the pupils may show various abnormalities. Headache and pain in the left side or epigastrium might also be present. On inquiry there would probably be obtainable a history of sore-throats or growing pains, or of a strong rheumatic taint in the family. In addition there might be symptoms that I have not yet mentioned. From the general nervous instability as seen in the earliest stages of chorea may arise many so called functional nervous disorders, such as disturbed sleep, night terrors, somnambulism, acquired enuresis, habit-spasms, lienteric diarrhœa, and the like.

I may now proceed to describe how this condition of mental and physical ill-health, which is rheumatic in origin and which I have termed "latent chorea," is met with in children. It may be seen in three groups of cases, and I give them, not in order of their importance, but in that in which they are most conveniently studied. These are (1) in children with obvious acute rheumatism; (2) in children convalescent from rheumatism and chorea; and (3) in children without any very obvious rheumatic symptoms.

1. *Latent chorea associated with acute rheumatism.*—Children with acute rheumatism of the joints, muscles, or heart show as a rule that the nervous system has not escaped. I have heard the saying attributed to a physician eminent among those who study the diseases of children that "nearly all rheumatic children have chorea." Certainly this is so if chorea is recognised in its earliest forms. If it is taken to be a disease of disordered movements only, and these are tested for by the coarse method of making the child hold its hands out straight in front of it, then the disease cannot be said to exist in all rheumatic children. A more delicate test for these movements is required. Watch how the child fidgets as one approaches the bed, how jerkily the hand is withdrawn from under the bedclothes to shake hands, or how the clumsiness in action is shown as the child pulls up its bed-dress for its chest to be examined; in such ways the traces of choreic movements are clearly seen. Often, indeed, a definite attack of chorea can be watched developing out of such slight signs as these. Another test which I have found of use is that noticed when looking for pupillary changes—namely, the child's inability to keep its eyes fixed on an object for more than a second or two. As Dr. Langmead pointed out, abnormalities of the pupils are not uncommon in these children. On the mental side also traces of chorea are quite evident. How depressed are children with acute rheumatism and this in the absence of pain. When admitted to hospital their trials are no greater than those of other children, but their unhappiness is much more severe. Often they can be found crying quietly with long convulsive sobs, the very picture of misery. This mental depression has often been noticed in cases of acute rheumatism, and has been attributed to the treatment by salicylates. But I have seen it many times where no such drug has been used, and I have seen children entirely free from it yet taking between 300 and 400 grains of sodium salicylate per diem, and am convinced, therefore, that this symptom of mental depression has, as have anæmia, cardiac "depression," and others, been erroneously ascribed to the treatment instead of to the disease. Salicylate of soda will, as Dr. Lees teaches, depress a child if allowed to produce nausea or vomiting, but not otherwise. In adults with acute rheumatism a feeling of intense misery is not seldom present and is not always attributed by the patient to pain. That it is not so marked as in children is explicable on the grounds that the nervous system is more stable in adults than in young subjects and that in children all bacterial infections tend to become more generalised than is the case in adults.

At a Christmas entertainment in a children's ward I had once an excellent opportunity of noticing the nervous instability caused by rheumatism. One of the performers entered the ward dressed in a "property" monkey's skin. Most of the patients were delighted, but from some came immediate shrieks of terror, and I noted that those frightened included not only convalescent cases of chorea, but children with joint or cardiac rheumatism.

The recognition of latent chorea in cases of acute rheumatism adds another link to the strong chain of evidence binding rheumatism and chorea together as the result of one and the same infection.

2. *Latent chorea in convalescence from acute rheumatism and chorea.*—During convalescence from acute rheumatism the signs of latent chorea are somewhat different from those just described. The main change is in the mental condition of the child, the morbid depression is succeeded by an unnatural mental exaltation. The convale-cent rheumatic child is a very delightful little person and in a ward is everyone's favourite. (I think no one will deny this.) He is affectionate, obedient, intelligent, and quick; his wits are, in fact, considerably sharper than those of most children. His shyness has gone and he is now willing very quickly to become your friend. He is very prone to become overexcited at play and has to be looked after on that account. He is apt to take liberties with you, and in his excitement may be very rude in a guileless way. A word from one in proper authority, however, quickly subdues him and may reduce him to tears of penitence; I do not think I ever saw him seriously punished.

In addition to these signs of mental instability the slight

[1] Goodhart and Still: Diseases of Children, seventh edition, p. 661.
[2] Common Disorders of Childhood, p. 458.
[3] THE LANCET, Oct. 13th, 1906, p. 982.

motor symptoms already mentioned are still present, but as the initial depression wears off a new facial movement makes its appearance. This is the quick smile of welcome seen on the approach of a visitor; pleasant enough in its way but far from convincing, a veritable "society smile." In cases of chorea it is often seen and indicates, I think, practically no emotion of pleasure, but during convalescence it does express in an exaggerated way the feeling of pleasure. It is very characteristic.

A patient recovering from chorea passes into exactly the same condition, and to one who has trained himself to recognise at sight the slighter forms of chorea it is often impossible to distinguish at a glance between the child who has rheumatic synovitis or slight heart trouble and one who is getting well from chorea. Lastly, under this heading comes an important consideration. This latent chorea of convalescence may depend on nerve-cells which have been damaged by a rheumatic infection which is passed and gone, but on the other hand—and this is specially to be feared where there are persistent anæmia and a regular slight nocturnal rise of temperature—it may be due to a still smouldering infection, one that is damped down but not destroyed.

3. *Latent chorea without obvious symptoms of rheumatism.*—It is to this class that I wish to call special attention, for by the failure to recognise it and its rheumatic origin we may lose a valuable opportunity of preventing the severer forms of heart disease.

Children suffering from this form of latent chorea may be brought to the doctor for various complaints. For the most part these are of a slight and indefinite nature. The mother may complain that the child is out of sorts, is languid, will often refuse to touch its food; in her own phrase, "I don't know what to make of him." Headache is a common symptom, and for this, I should imagine, these children not seldom find their way to the ophthalmic departments of hospitals. The mother may volunteer the fact that the child is very nervous but, as a rule, inquiry has to be made if there has been any change in the child's temperament, when it will be found that he has become excitable, fidgety, irritable, passionate, and timid. The patient may have become too frightened to sleep alone or to cross a street. Sometimes the child's pallor attracts the mother's attention, or it may be that symptoms referable to the cardiac dilatation, such as the feeling of being always tired or of the feet being too heavy to lift, cause the visit to hospital. Fidgetiness is rarely in these cases the chief complaint, but on inquiry the mother has usually noticed it, and may say that the boy is no longer able to play quietly by himself or the girl to sit at her sewing. In addition, the voluntary movements of the finer sorts have become clumsy. I have seen in these children the marks of needle pricks all over the three middle fingers of the left hand, while in an ordinary little girl who sews they are confined chiefly to the inner surface of the index and to the tip of the middle finger. Their mental fidgetiness is often shown by the fact that although previously good at school they have lately got into disgrace over their lessons, particularly their sums, and may even have been threatened with degradation to a lower class.

On the other hand, more definite symptoms arising from the nervous instability of these patients may cause the child to be taken to the doctor. The most common of these are talking (often doing sums) during sleep, difficulty in getting off to sleep, night terrors, somnambulism, acquired enuresis, lienteric diarrhœa, or habit spasms. These cannot be regarded as part of the chorea, but are rather of the nature of complicating symptoms; the chorea causes the nervous instability, which in its turn is responsible for the appearance of this group of disorders. The appearance in rheumatic children of such conditions as these has been noted by many authors.

The *diagnosis* of this type of chorea is often suggested at sight, partly by the peculiar pink flush of the patient's cheeks and partly by the general deportment of the child, the fidgetiness, the smiling, and the generally unbalanced nervous state. Such an impression needs careful confirmation by means of the examination of the patient's symptoms and physical signs. Of first importance is the question of sore-throats and growing pains, while headaches are of very constant occurrence. In 16 consecutive cases of latent chorea of this type I noted sore-throats in 13, growing pains in 9, and headaches in 11. Inquiries should be made into the family history for evidence of rheumatic fever or chorea in the parents or, a matter of greater importance, in brothers and sisters. As might be expected, an inherited neuropathic taint can often be traced. In a neurotic child the earliest symptoms of a mild rheumatic infection are likely to be those referable to the nervous system. Dilatation of the heart is in favour of a rheumatic infection, for this is the most common cause of such a condition in children.

We have, then, to decide in any particular case if the condition is one of latent chorea or is simply an expression of nervousness in a neurotic but non-rheumatic child. A nervous child may show a considerable amount of fidgety movement—a *microkinesis*, Dr. F. Warner has termed it, and may be emotional and anæmic and may show slight dilatation of the heart. The symptoms of latent chorea can, as a rule, be distinguished from this state with fair ease. They are of recent origin, the movements are rather different in type, and are associated with clumsiness in the finer voluntary movements, as in sewing. The impossibility of getting the child to fix the eyes on an object for more than a second or two is much more characteristically present in cases of latent chorea than in neurotic but non-rheumatic children. But sometimes it is difficult to decide between the two conditions; as Dr. Still[5] says, a nervous child "manifests a general fidgetiness which is easily mistaken for a slight chorea." Where such a difficulty arises, the question can usually be settled by inquiry into the matter of sore-throats and growing pains. Where these are, or have been, present, and especially where they are associated with dilatation of the heart, headaches, pain in the left side or epigastrium, moist hands, and where there is a marked family history of rheumatism, the diagnosis of latent chorea becomes increasingly probable. The diagnosis is not to be settled by the presence of any one of these points but by the coexistence of several of them.

I do not wish to suggest that all children who are nervous, fidgety, and pale, and who show slight dilatation of the heart, wet hands, or pupillary abnormalities are the subjects of a rheumatic infection; in many such there is no evidence of this disease to be traced. But it is the main object of this paper to emphasise the fact that just such a condition of ill-health and nervous instability may be due, and in London is very commonly due, to a latent chorea. It is then a matter of some moment that the physician, confronted with a child suffering from various nervous symptoms, should bear in mind the frequency with which such disorders owe their origin to a rheumatic infection; for, to transpose Dr. Still's words quoted above, a child with a slight degree of chorea manifests a general fidgetiness (with others signs) which is easily mistaken for simple nervousness.

It might be suggested that what I have termed latent chorea is due to a rheumatic toxæmia, while chorea, fully developed, is due to a rheumatic infection of the central nervous system. While this may or may not be the case, it is a small point beside the important one of the recognition that the condition is rheumatic.

Lastly, the association between rheumatism and "nervousness" has been recognised for many years until it has become to be vaguely held that the infection is particularly prone to attack children of a neurotic temperament. It appears to me, however, that this association is much more properly explained for the great majority of cases by regarding the nervousness as a result of a mild and unrecognised infection. Given the infection, the symptoms of chorea, latent or fully developed, are more prone to appear in a neurotic than a normal child.

Conclusions.—1. That (rheumatic) chorea declares itself first by symptoms significant of general nervous instability. 2. That in dealing with children suffering from nervous disorders of many kinds special care should be taken to exclude the possibility of their having originated from a slight rheumatic infection. 3. That the well-known association between rheumatism and nervous instability is not to be explained by considering that the infection is specially prone to attack neurotic children, but by regarding the nervousness as in most cases the outcome of an infection already present (latent chorea). 4. That the mental depression and headache in rheumatic children are usually to be attributed to the disease and not to its treatment by salicylates. 5. That

[5] Loc. cit., p. 463.

the recognition of latent chorea in children suffering from obvious acute rheumatism affords strong evidence that chorea is a rheumatic condition.

Queen Anne-street, W.

NOTES OF A CASE OF X RAY ULCERS CURED BY HILTON'S METHOD.

BY AGNES F. SAVILL, M.A. ST. AND., M.D. GLASG., M.R.C.P. IREL.,

ASSISTANT PHYSICIAN TO ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, LEICESTER SQUARE.

A MARRIED woman, aged 30 years, consulted me at St. John's Hospital for Skin Diseases on Feb. 2nd, 1909, complaining of intense pain in two ulcers situated on the left shoulder and upper arm. The ulcers had appeared after prolonged treatment by X rays for scleroderma, and the pain was so severe that she had not slept for over an hour at a time for nearly two years.

The patient was a sensible woman, able to give a clear account of her illness and the progress of her symptoms. Just after the birth of her first child in 1898 she had pain in the left breast, and a few weeks later she noticed the skin on the inner side of the breast had a white mark, which increased in size very slowly and spread over to the sternum. About four years later (1902) the left shoulder and upper part of the arm became affected similarly, and during the following year the whiteness and thickening of the skin gradually extended to the forearm. In 1903 she sought advice at one of the large hospitals in Great Britain and treatment by X rays was ordered. Six months later the disease appeared on the outer aspect of the left thigh, and X rays were administered to that patch also. Some time later she became aware that small patches had appeared on the back and on the chest under the left arm, and in the winter of 1908-09 patches appeared on the left side of the neck just above the clavicle.

History of the X ray treatment and its results.—The treatment was administered almost daily for a period of two years, from 1903 to 1905. The left shoulder was exposed to the rays for five minutes, the lower part of the arm for another five minutes. During this treatment of the arm she was in the habit of sitting with the elbow flexed, the hand resting on the shoulder, with the thumb tucked in under the first finger. The breast and the thigh were also exposed for about five minutes each. Thus the daily treatment lasted altogether about 20 minutes. Sometimes there was a degree of reaction, when she was given a week or two of rest until it had subsided. The reaction consisted of redness and soreness, not severe, and it occurred only on the upper left arm and shoulder, never on the breast or thigh. She believes that towards the latter part of the treatment it occurred about every six or eight weeks, and usually lasted only for about one week. In 1905, however, a very severe reaction occurred, which extended down as far as the elbow, and the left side of the face and the first and second fingers of the left hand also were affected. She decided not to have any more treatment. A year or so later she left that town and came to reside near London and was therefore unable to seek advice from her former medical men for the conditions which ensued. When the inflammation had subsided she noticed two small "pimples," one on the left shoulder, one about 2 or 3 inches lower on the upper arm. These "pimples" remained troublesome for two years (1905 to 1907); always catching in her clothing as she dressed and undressed and were very tender. They had a hard scaly top, and later became red and swollen around. About 1907 the scaly tops used to come off frequently, grow again, and again fall off. Then the tops failed to reform, and open sores were left beneath. A little lower down on the arm was a smaller pimple which, presumably, was not so much exposed to friction, because the patient's attention had not been drawn to it; the importance of this lesion will be referred to below. The two ulcers slowly increased in size and became intensely painful. The upper ulcer was never larger than the size of a shilling, the lower became as large as a five-shilling bit, and was, she thinks, about ¼ inch deep; at no time was there much discharge. For two years (1907-09) she was unable to obtain relief sufficient to obtain more than an hour of sleep at a time. She sought medical advice in various quarters, and tried innumerable remedies in vain. At last she discovered that carbolic fomentations (1 in 100) gave more relief than any other application. Even with this she was obliged to rise up in the night every hour to apply a new dressing, and her whole life, day and night, was devoted to devising some method of alleviating pain for an hour or half an hour at a time. The pain was steady, with occasional sharp darts, and extended from the ulcers up to the spine; she indicated a position on the spine extending 3 inches below the second dorsal vertebra.

Condition when seen in February, 1909.—When the patient consulted me at St John's Hospital there were two ulcers, one on the rounded part of the left shoulder, the other 2 inches lower on the outer aspect of the arm. Both were about the size of a shilling, the lower slightly deeper, about one-third of an inch, with irregular raised margins and clean red bases. Two inches nearer the elbow, in a line with the ulcers, was a hard raised papule with a scab. This was picked off a few days later and revealed a small ulcer which in three days time enlarged to the size of a threepenny-bit. The patient explained that the upper two ulcers had begun in a similar fashion and she had not observed when the third nodule first made its appearance. The ulcers were situated on a band of thick sclerodermatous tissue which extended down as far as the middle of the forearm. This band varied in breadth from ¼ to 1 inch, and was surrounded by an area of white atrophied skin over which coursed large telangiectases. The first and second fingers of the left hand (which, as described above, had also been exposed to the X rays) showed signs of chronic X ray dermatitis of a mild degree—slight atrophy and telangiectasis, with brittleness of the nails, and the left cheek presented a slight mottling which was not seen on the other cheek. Similar atrophy with large telangiectases existed on the breast and thigh, the parts which had been exposed to the rays. Patches of morphœa (localised scleroderma) were present on the back and chest; some of these were white and thickened, some were pigmented, with a purple surrounding area, such as is frequently met with in association with morphœa, but none of those untreated areas had the marked degree of telangiectasis present over the areas which had been exposed to the X rays.

Treatment.—After trying cocaine and other analgesic applications a week without any effect I asked my colleague, Dr. Alfred Eddowes, to see the patient and to take her into the hospital if he considered that an operation would yield good results in such a case. Dr. Eddowes considered that the only possible method of giving relief to the patient was to divide the nerves just before they entered the ulcerated areas. Accordingly, on Feb. 18th, 1909, he operated. A semicircular incision, about one inch deep, was made above each of the three ulcers. Another slightly shorter semicircular incision of the same depth was made across the centre of each ulcer. Free bleeding was encouraged; and the gaping wounds were stuffed with aseptic gauze and a fomentation applied. The gauze remained in for several days; it was left *in situ* until the granulation tissue, swelling up from the bottom of the wounds, pushed out the gauze before it. The gauze, therefore, was not removed until nature herself rejected it, and the wounds healed up slowly with abundant granulation tissue. The natural healthy discharge was not washed off with antiseptic lotions; a non-irritant boracic acid ointment with yellow paraffin basis was applied. The operation had an immediate result for the better on the patient's condition. Although a sleeping draught of chloral hydrate was administered for another week the patient stated that on the evening after the operation the pain had entirely altered in character, and she so rapidly improved that at the end of the week she was able to have a good night's rest without the administration of any hypnotic. During her residence in hospital injections of fibrolysin were given to bring about absorption of the extremely hard sclerodermatous condition of the arm. When the patient was discharged from the hospital after three weeks' residence the ulcers had almost healed up and were completely free from pain. Since that time (March) she has attended more or less regularly, at fortnightly intervals, the out-patient department of the hospital. Although the operation had cured the pain and the ulcers had at once started to close complete healing did

not take place for several months; a tiny nodule remained in the centre which refused to be completely covered with healthy skin. Many different lotions and ointments were tried, but the only application which did not set up discomfort was boracic ointment made up with yellow vaseline. It must be remembered that these ulcers were situated on sclerodermatous tissue, and the unhealed nodule was in the centre of the thick waxy band of diseased skin. The injections of fibrolysin begun during the stay in hospital were repeated at each visit to the out-patient department with the object of softening the thick sclerodermatous parts. The result of the injections was satisfactory; all the thickened parts became softer and thinner. By October, 1909, the upper two ulcers were completely healed, but the third still presented a small nodule, which did not heal till November.

Remarks.—The case is of interest in that it demonstrates how certain forms of X ray ulcers may be cured, and the excruciating pain relieved even after two years' suffering by the old method described by the late Mr. John Hilton. In his well-known work "Rest and Pain"[1] he mentions an exceedingly painful and obstinate form of ulcer. He believes the condition was due to the presence of an exposed or injured nerve termination near the surface of the ulcer. The pain was relieved and the ulcer cured by passing a pointed bistoury in such a way that the nerve was divided between the spine and the painful part in the ulcer. Very little is at present known of the condition of the nerves in X ray dermatitis, and as no histological examination was made of the ulcers in the present case it would be useless to formulate any theory as to the cause of her pain. In spite of the fact that the ulcers appeared on a part of skin affected with scleroderma there can be no doubt that they were due to the frequent short doses of X rays. In a letter to the *British Medical Journal* (September, 1906) Mr. Hall-Edwards describes his unhappy experiences, and it will be noticed that his description of pain corresponds with that endured by the patient in the case above described. "I have not experienced a moment's freedom from pain for more than two years. The pain is of a neuralgic character; it never ceases, and is intensified from time to time by sudden stabs and jumps." So far as I have been able to find in the somewhat scanty literature on the subject of the treatment of these chronic ulcers, curettage and skin-grafting, or excision, have been the only successful methods of dealing with them, and amputation when they begin to take on a malignant character. I hope the above brief notes may be of use to sufferers who have tried local applications in vain.

Harley-street, W.

ACTION OF CRYOGENINE ON PHTHISICAL TEMPERATURE.

BY J. E. GORDON, M.D. EDIN.,
MEDICAL SUPERINTENDENT, DEVON AND CORNWALL SANATORIUM.

MOST recent advances in the treatment of the thermal state in pulmonary tuberculosis have a tendency towards dispensing entirely with the assistance of drugs. The absolute rest practice for the lowering of the temperature has very much to commend it, and in an institution where it can be efficiently promoted very satisfactory results are obtained. The "spoon-fed and bed-pan" patient, however, is by no means always a possibility, and notably is this the case in general practice where the means of the patient do not always permit of the luxury of a nurse. In certain sanatoriums for consumptives—for instance, in those which are run without a nursing staff—absolute rest for any length of time, the view being the lowering of temperature, cannot be insisted upon. Absolute rest not being possible, the question is, then, what are the best means to be adopted to influence a thermic depression? Of course, the patient is put to bed, and if fever is high sponging may be resorted to, and an acid mixture, or aspirin or phenacetin, may be ordered. This may be all that is necessary, and the temperature comes down to remain down.

In the case of obstinate temperature the ordinary pharmacopœia of antipyretics may be tried, one after the other, without result, or merely with transitory effect. The continued course of the high temperature of acute disease, besides discouraging the patient, causes grave physical distress, and it is imperative that the practitioner should find the means to control it. The usual remedies having been tried and found wanting, the exhibition of the little-known drug (in this country) cryogenine may result favourably. I am prompted to speak kindly of cryogenine, as, from a long experience of it, I have found it to act in many instances where the more notorious antipyretics have failed. Cryogenine has been considerably mentioned in continental medical literature. In regard to its composition the following formula is given:—

$$C^6H^4\begin{cases}CoAzH^2\\AzH-AzH-Co-AzH^2.\end{cases}$$

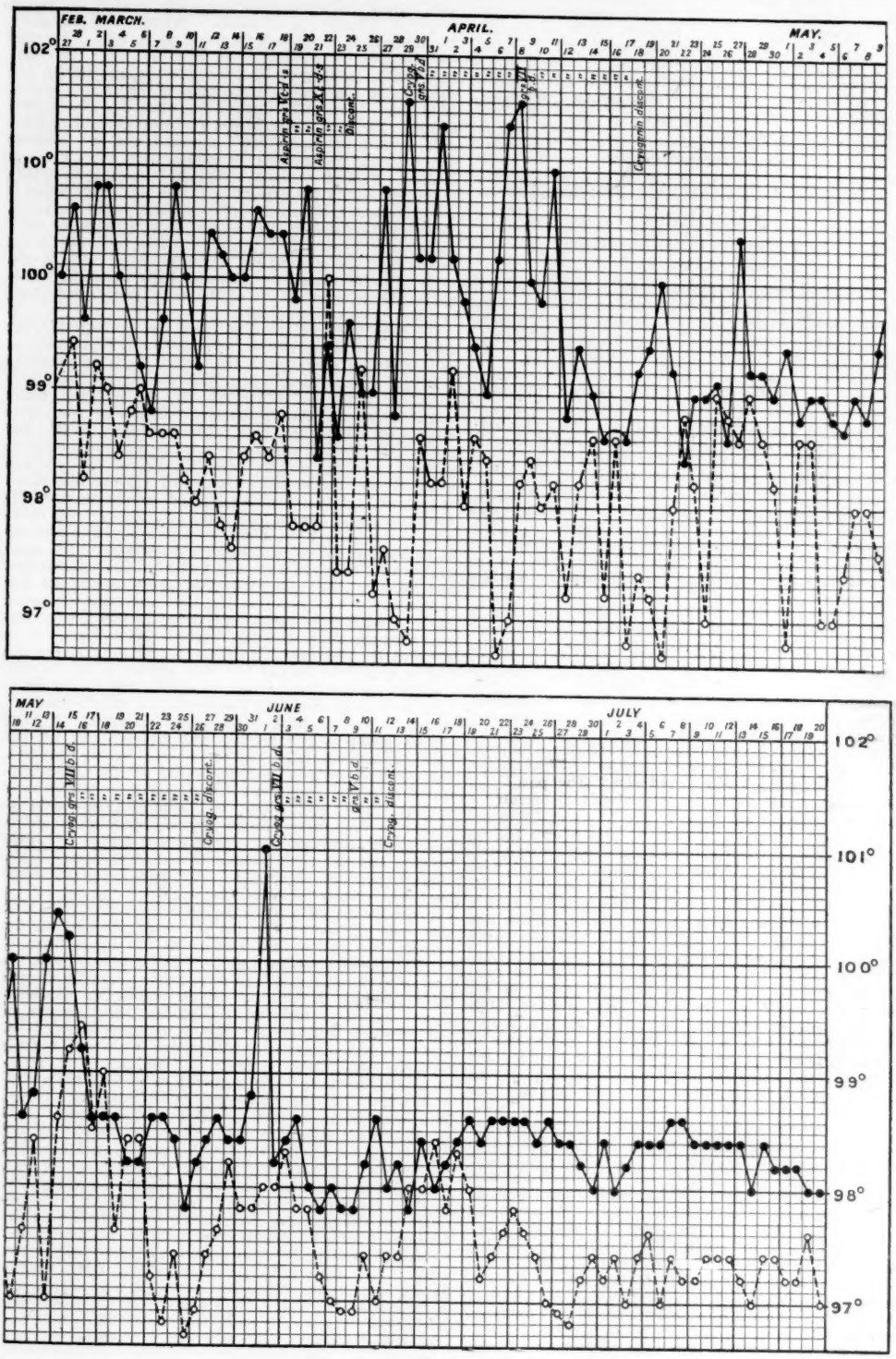
The introduction of the group AzH — AzH — Co — AzH^2 into the aromatic nucleus is stated to endow this drug with its antipyretic properties. "Az" is the French symbol for azotum. Cryogenine is, in short, a semi-carbazide.

Cryogenine being a powder, the simplest way to administer it is as such, or in a wafer or cachet. As to dosage, I have never exceeded 8 grains. For adults 5 grains is a suitable quantity to commence with, and often it will be found unnecessary to exceed this amount. Cryogenine is said to possess very little toxicity. While the doses I have mentioned are smaller than those prescribed on the continent, I have never found any ill effects to attend their continuous administration twice daily for a fortnight or three weeks. Far from this prolongation having a deleterious effect on the organism, the patient will often confess to a sense of well-being while under the influence of this remedy. It is, however, not advisable to continue cryogenine for too long, as constant use predisposes to immunity. The method of dosage on the continent is to begin with a large dose, 50 to 120 centigrammes (about 8 to 19 grains), and, the thermic depression having thus been attained, to continue in decreasing doses at intervals of 24, 36, or 48 hours as necessary. Children and debilitated individuals, of course, require weaker doses. By giving smaller doses, 5 to 8 grains at 12 A.M. and 4 P.M. daily, and continuing these until the temperature appears settled, the effect is to induce a steadier and more persistent attack on the thermal phenomenon. The object of the 12 and 4 o'clock administration is to intercept the evening rise.

In the accompanying chart the effect of cryogenine is shown. The patient was a girl, aged 16 years, by occupation a clerk. She came under observation with acute pulmonary disease of short duration, Stadium ii. (Turban's classification), L. (infiltration both lobes). There was no expectoration, but a Calmette instillation was positive. The disease was of a particularly virulent character; the fever was high, there were profuse night sweats, and wasting was marked. From the period, Feb. 27th to March 28th, the patient was prescribed rest, good airing, special diet, which included raw-meat feeding, and the occasional manifestation of aspirin (5 grains, later 10 grains, three times a day). The rest, I may say, was not absolute: the patient was allowed to read, sew, feed herself, and go to the lavatory. The aspirin produced a transitory effect. On March 29th cryogenine (5 grains twice a day) was commenced, with no result. An increase to 7 grains twice a day produced in the course of a few days a fall in the temperature to normal. On April 18th the drug was discontinued, chiefly on the probability of immunity resulting if it were continued longer. The consequence was a decided elevation of the evening temperature, but at no point did the rise reach the former summits. The drug was re-administered on May 15th in 7-grain doses and immediately caused a normal reading. On the 27th the cryogenine was discontinued, and a few days later a last thermic flutter to 101° F. was exhibited, which was promptly discouraged by a renewed course of the drug. The patient was now gaining weight; the physical signs were satisfactorily clearing up. She was put on the usual course of graduated exercise and later graduated work. She was discharged very much improved, with slight physical signs, a gain of 29 pounds, and in a fit condition to return to her ordinary occupation.

The above case is one out of a number of successful results obtained from the use of this remedy. Contrasted with

[1] London, 1863, p. 136.



The circles equal morning temperature (7 A.M.). The dots equal evening temperature (5.30 P.M.). The temperature was taken in the mouth.

pyramidon, which certain writers regard as the best drug for phthisical temperature, I think there can be little doubt that cryogenine is the safer and more efficacious antipyretic. Pyramidon shows a quicker and more pronounced fall—three, four, or more degrees, whereas cryogenine is content with a drop of two or more degrees. The former action is decidedly risky, as collapse may follow this sudden depression, especially if the fall be to subnormal.

Didworthy, South Brent, Devon.

A CASE OF PERIPHERAL NEURITIS (ALCOHOLIC).

BY JOHN WYLLIE, M.D. GLASG.

ON Nov. 27th, 1908, I was asked to see a married woman, 40 years of age, to certify for asylum detention, but her mental condition did not seem to me to warrant such a grave step, an opinion with which Dr. Edward O. Daly of this city agreed. The woman admitted having taken drink freely during the last 15 years—beer for the most part. Her tongue was dirty, but not tremulous; breath markedly offensive; urine scanty and high-coloured, but contained no albumin or sugar, and had a specific gravity of 1020. She was ruddy-faced and still having her periods, which usually lasted a week. The liver projected two finger-breadths below the edge of the last rib and was hard; the spleen was larger than normal. The pulse was quick and at times irregular, and the apex beat was diffused; otherwise the heart and lungs were normal, as also was the temperature. The patellar-tendon reflexes were absent, and the patient had complained during the last few days of shooting pains in her legs, and she had been inclined to fall suddenly, her legs giving way without warning.

On Dec. 3rd she could no longer stand and could barely move her limbs in bed. The muscles in both upper and lower extremities were flabby and ill-nourished, and were the site of occasional spasm; *both* knee- and wrist-jerks were absent on the right and faintly flexor on the left side. She complained of her legs feeling numb, but not of tingling. There was some loss of appreciation of tactile stimulus and only a very slight response to faradic electricity. Muscular pians were very prominent, and she called out when a limb was grasped; the knee- and ankle-joints were very painful on movement, but there was no effusion. The patient had a thick, coarse voice, and when she worked herself into a state of excitement upon domestic affairs her breathing was apt to become laborious. Citrate of potash with nitrous ether and cinchona were given internally, and daily intra-muscular injections of liquor strychniæ (10 minims) were begun. On Dec. 29th, as the neuritic and deep muscular pains were now much less marked, massage and the daily application of voltaic electricity were started. There was morning vomiting. The paralytic state was now more absolute than the note of Dec. 3rd conveys. The patient could not raise herself in bed or even raise her head from the pillow, or convey a piece of bread to her mouth; she could not raise her legs ever so little from the bed, or separate them more than a couple of inches, or turn over in bed. There was no paralysis of any cranial nerve, but beyond the power of laughing and crying, &c., the only voluntary powers present were the ability to swallow, to turn the head a little to either side and slightly to raise the forearms, and a restricted power over the bowels and bladder. There was a frequent desire to micturate and defæcate, which may be partly explained by highly concentrated urine in the one case and the presence of hæmorrhoids in the other, and if she was not provided with the bedpan quickly accidents happened, but there were no shooting girdle pains or bedsores. The pupils responded actively to light and accommodation, and colour vision was normal. The abdominal reflexes were normal and the other reflexes were in the same state as formerly noted, except that the slightly flexor state of the left plantar had disappeared. The muscles of the forearms were much wasted, as were the thenar and hypothenar eminences and the interossei; the muscles of the legs were not so much shrunken as those of the forearms, but they were very flabby. Tactile and thermal sensibility was now good, but all over the legs a pin-prick was spoken of as something cold, and the grasp of each hand was just appreciable. When the forearms were raised the hands hung helplessly, exactly as seen in text-book illustrations of people suffering from lead-palsy. The lower limbs could only be drawn up an inch or two and the feet were in a straight line with the legs; the condition known as dropped foot, the effect of gravitation and paralysis of the anterior tibial muscles, being well shown. Joint pains were still very severe when the limbs were moved. The patient wandered a good deal at night and was said to have delusions, but I always found her coherent and rational. The reaction of degeneration of muscles was marked. Faradic electricity elicited feeble responses in both thighs, except on the outer side of the left thigh, where it was more active, but there was no response below the knees. Faradism was feeble in the forearms and normal in the arms. Voltaism of 8-cell power produced feeble responses in the extensors of the forearms and strong responses in the flexors. Both forms of electricity produced little irritability when applied to the nerve trunks of the arms (median and ulnar) and legs (peroneal and tibial).

On Jan. 10th, as the urine was less concentrated, the medicine had been changed to potassium iodide, capsicum, and strychnine, except when the neuritic pains were much in evidence, when a chlorodyne mixture was given. There were occasional attacks of orthopnœa. On the 16th the patient was much worse. During the night there were two severe attacks of difficult breathing, made worse from the fact that the sufferer could do nothing to raise herself into the sitting posture. She was ordered potassium iodide, digitalis, and nitroglycerine, and extractum stramonii (½ grain), to be taken at bedtime. Massage, electricity, and strychnine injections were to cease for a time. On Feb. 2nd the dropped hands were not so noticeable, slight wrist-jerks could be obtained on both sides, and the patient could lift a full soda-water syphon with her right hand and a half full one with the left, and she recognised pin-pricks over the whole of the four extremities. The power in the legs had been increasing during the last three weeks until she could now flex the legs well upon the thigh, but she required the assistance of an attendant in re-extending them. The feet could be raised a foot or more from the bed but were allowed to fall sharply. Ankle clonus had disappeared. On the 15th the patient could take her food in the sitting posture, with a chair behind her, and could feed herself, but in a jerky manner. On the 22nd she was always lying upon her right side and kept the left leg continually flexed, crying out when it was straightened, and in order to avoid the possibility of this faulty condition becoming permanent side splints were ordered to be applied daily for eight hours. On March 10th she could raise herself to the sitting posture by the merest touch of the attendant's hand, her legs were no longer kept in the flexed position, and she could change them from the flexed to the straight position without pain. Although the grasp of the hand was greatly improved she could not by her utmost efforts move the indicator of the dynamometer. On the 24th there was full control over the bowels and bladder, and the attacks of orthopnœa had ceased. As the dropped foot on both sides was becoming rigid, simulating equino-varus, the heel being raised and the sole turned inwards, and the hands were assuming a claw-like state, splints to counteract these conditions had to be applied. On account of the tendency to spasticity the hypodermic injections of strychnia were discontinued altogether. On April 1st tonic medicine was given instead of the iodide of potassium, tinctura ferri being preferred to quinine for a time on account of the patient being somewhat anæmic. On the 16th, with strong support on either side, the patient could stand, and she felt her weight upon her heels for the first time during her illness. On May 1st nothing had been said lately about delusions, the removal of hard plugs of wax, which pressed upon the membrana tympani on either side, possibly removing a source of reflex irritation.[1] The reaction of degeneration had almost disappeared. In the matter of reflexes the condition was as follows:—Wrist-jerks: right, fairly active; left, just appreciable. Knee-jerks: right, active; left, appreciable. Plantar reflex: right, slightly flexor; left, absent. There was as yet no voluntary flexion at the ankle-joint, and if there was any at the toes it was very slight. The patient could feed herself fairly well, and with strong support could walk about 12 steps, but in a

[1] Three or four months after the close of the writer's attendance the patient was certified as insane.

thoroughly ataxic way. The hands and feet were quite supple, and could be moved passively in any way without pain.

Remarks.—The treatment was directed not only so to improve the state of the peripheral nerves as to restore feeling to the skin, which was more or less insensitive, and power to muscles which were paralysed, but also to create in the patient a distaste for drink. What was the cause of the orthopnœa? There was no bronchitis, lung trouble, or albuminuria, and the heart and valves were normal. I suggest fatty degeneration or infiltration of the heart on the one hand and a faulty innervation of the organ on the other. Recovery is strongly against the former view and in favour of the latter, especially as improvement was coincident with the return of motor power in the limbs, and I think neuritis of the cardiac branch of the vagus is the correct answer. The inability to turn to one or other side or to rise from the recumbent position indicates that the neuritis was not confined to the extremities.

Vaso-motor disturbance was never very obtrusive; the legs and feet looked cold and livid and felt cold to the patient, and there was slight œdema of the dorsum of the left foot. The highly abnormal state of the lower reflexes, particularly the presence of ankle clonus, probably signifies that there was some change in the motor cells of the anterior cornua of the cord. Space forbids me to discuss the differential diagnosis, but I may say that the *bilateral* wrist-drop and foot-drop, the deep tenderness of muscles, and the alcoholic history chiefly influenced me in concluding that my patient suffered from peripheral neuritis.

Hull.

A CASE OF PNEUMONIA MIGRANS.

BY H. BUCKLEY RODERICK, M.A., M.D. CAMB.

IN THE LANCET of Nov. 13th last, p. 1409, Sir Clifford Allbutt refers to a case of "pneumonia migrans" which he saw in consultation with me during its earlier stages. The progress of the case, ending in complete recovery, presents several points of interest, the details of which are as follows:—

The patient, a young lady, 27 years old, single, consulted me on July 13th last, complaining of slight occipital headache and feeling "out of sorts." Previously she had had no serious illness. In the autumn of 1908 she consulted me about a cough, some loss of flesh and appetite. As to the family history, her mother died from phthisis about the age of 40; one brother, now aged 21 years, is the subject of dormant caries of the spine; an elder brother is said to have recovered from pernicious anæmia; the rest of the family are apparently strong and healthy. At this time I carefully examined the patient's chest for possible early signs of tubercle, but could find none. I also subjected her expectoration, which was very slight, to bacteriological examination, with a like negative result. She rapidly recovered her usual health under a course of cod-liver oil and tonics, and I did not see her again until she consulted me on the present occasion.

The patient informed me that on July 9th she went for a cycle ride feeling perfectly well. She was caught in a shower of rain, but, in spite of her damp condition, rode on to a cemetery, where she remained some time arranging flowers on a grave. On the 10th she began to feel ill, and the following day being a Sunday, she stayed in bed, feeling cold and shivery. On Monday, the 12th, she kept about, but on Tuesday, owing to increasing headache, she came to consult me in the evening. Her temperature being 103° F. I told her to go to bed, and prescribed 10 grains of aspirin every four hours. During the night she was delirious at times and had no real sleep, the headache becoming more severe. The temperature ranged between 102° and 103°, respirations 24, and pulse 100. I examined her chest but could find no adventitious sounds. On the morning of the 16th, after another delirious and restless night, her temperature stood at 104°, and on examining her chest I found a small patch of consolidation between the right scapula and the spine. During the next two days the temperature ranged between 102·5° and 104°, but the most distressing symptom was a noisy delirium and sleeplessness, notwithstanding the administration of 15 grains of bromide every four hours during the day and 7½ grains of veronal at 9 P.M. prescribed by Dr. Laurence Humphry, who saw her in consultation with me at this stage. On the morning of the 18th her temperature had dropped to 101·2°, and, it being about the seventh day of the disease, I hoped that the crisis had been reached, but during the day it rose to 103·4°, and after another restless and noisy night the temperature at 2 o'clock the next day had risen again to 104·4°, and a patch of consolidation had appeared in a corresponding situation in the left lung. Another bad night followed, but her temperature came down by stages during the day and night following so that at 6 o'clock on the morning of the 21st the thermometer registered 99·4°.

During this period the patient lay in a semi-comatose condition, with somewhat contracted pupils, muttering delirium, and occasional muscular twitchings. The urine on examination was normal; the sputum, scanty and never rusty, on bacteriological examination was found to contain some pneumococci, but no tubercle bacilli. On the advice of Sir Clifford Allbutt, who considered the case presented symptoms of meningitis, I performed a lumbar puncture which proved negative. During the 21st the temperature rapidly rose to nearly 103°, accompanied by a return of the delirium, and on the evening of the 22nd scattered patches of consolidation appeared on both sides of the chest. On the night of the 23rd the patient became noisy and very violent, and was not alleviated by a four-hourly dose of 15 grains of bromide and one hypodermic injection of morphia (¼ grain). She refused all nourishment; her temperature oscillated between 101° and 103·8°. On the 25th Sir Clifford Allbutt again saw her in consultation and advised a half-drachm dose of chloral and 20 grains of bromide at 9 P.M. About 2 A.M. she began to perspire profusely, and slept for seven hours, her temperature rapidly falling from 103·8° to 101·5°. On the night of the 27th the restlessness returned, and on the following morning, her temperature standing at 102·5°, an urticarial rash appeared over the chest and abdomen. She was foaming at the mouth, the face distorted, the limbs twitching. At 2 P.M. the thermometer registered 103·8° and a fresh patch of consolidation appeared at the right apex. Tache cérébrale was very well marked. I here prescribed quinine sulphate (2 grains) every four hours. The twitchings continued throughout the night, but the temperature dropped to 100° by 10 o'clock the next morning, only reaching 101·8° during the day. She was here seen by Dr. Latham, who considered the case presented all the appearances of acute tuberculosis and advised the continuance of the quinine. At 5 A.M. on the 30th the twitchings ceased and the temperature remained at 100° till after mid-day, when it rapidly rose to 103·4°. The patient was quiet, showed signs of exhaustion, and continued in a semi-comatose condition. Throughout the 31st the temperature remained almost constant at 102°; at 6 o'clock on August 1st it rose suddenly to 104° and another patch of consolidation appeared on the left lung under the third and fourth ribs in front. The right apex, however, was distinctly clearing. From this, together with the fact that the very scanty sputum only contained a few pneumococci, I concluded that the infection must be pneumococcic and not tuberculous. Consequently on the 2nd, the temperature at 2 A.M. having been 104·2° and dropping at 2 P.M. to 102°, I injected ½ cubic centimetre antipneumococcic vaccine (Lister Institute polyvalent) containing 2,500,000 dead pneumococci. This was followed by a further drop in the temperature to 100° at 6 P.M. and to 98° at 6 the next morning. The patient, though exhausted, became quite conscious and rational. On examining the chest the right apex was found to be clear, but a dry pleuritic rub could be heard over the third left rib area in front. The temperature during the day only rose to 100·8° and descended again the next morning to 98°. The right lung was quite clear and in the left lung could be heard sharp râles and coarse rhonchi. Next morning the temperature was again subnormal and did not exceed 100° during the day; the left lung was clearing fast. On August 5th the temperature remained practically normal all day and continued so, the patient making a slow, but uninterrupted recovery.

The striking features of the case were: (1) the cerebral symptoms, which persisted throughout the illness, varying from a semi-comatose state to a violent delirium; (2) the migratory nature of the pneumonia and the small area of

lung involved in each attack; (3) the slight disturbance of respiration, which only once reached 40 to the minute, being usually about 28; and (4) the rapid recovery after the small dose of antipneumococcic vaccine, which it is reasonable to suppose was instrumental in bringing about the favourable result.

Cambridge.

A CASE OF SYPHILIS OF THE PANCREAS WITH A PANCREATIC CALCULUS IN THE DUCT.

BY J. GEORGE TAYLOR, M.A., M.D. CANTAB., M.R.C.P. LOND.,
HONORARY PHYSICIAN, GENERAL INFIRMARY, CHESTER.

THE following case seems to me to be of sufficient interest and rarity to be worth recording.

The patient, a man, aged 45 years, was admitted into the General Infirmary, Chester, under my care on Jan. 20th, 1909. His history was that he had been suffering from Bright's disease for 12 months and that six weeks ago he had had a fit. The family history was unimportant except that his wife had had three miscarriages, varying from the fifth to the seventh months of pregnancy, and that the fœtus in each case was dead. On admission the patient was very weak; the pulse was hardly palpable, the expression was anxious, and the tongue was dry and brown. The temperature was 97·8° F., the respirations 28, and the pulse 94. The heart's apex beat was a quarter of an inch outside the nipple line, but no murmurs were heard. The lungs appeared healthy. In the abdomen a tumour was felt at the tip of the ninth right rib, protruding downwards and inwards towards the umbilicus for about 2 to 2½ inches. It was rounded in outline, something like half an orange, hard, and not tender on pressure, nor moveable. The dulness was continuous with the liver dulness, and the tumour appeared to be an outgrowth from the liver. There was some tenderness over the loins. The urine was of specific gravity 1012; it was acid, there was a large amount of albumin, but no sugar. No casts could be found. There was a good deal of œdema of the legs.

In view of the family history it was thought that probably the abdominal tumour was gummatous in nature and that the albumin in the urine might be due to some lardaceous change in the kidneys secondary to syphilis. The patient was therefore ordered 20 grains of potassium iodide with drachm doses of liquor hydrargyri perchloridi three times a day. On Jan. 25th a pericardial friction sound was heard near the apex and also some pleural friction at the left base. On the 30th the albumin was distinctly less and the liver dulness was slightly diminished. For the last few days he had been feeling better. On Feb. 4th he vomited occasionally and the albuminuria was still getting less in amount. On the 9th he seemed less well; his pulse became very feeble and only 42 per minute. From then until the 13th he gradually got weaker and died during the evening of that day.

At the post-mortem examination extensive pericardial adhesions were found; at the apex there was some hæmorrhage under the visceral layer of the pericardium. The left ventricle of the heart was hypertrophied. The aortic valves were healthy; the mitral, tricuspid, and pulmonary valves were sclerosed. The coronary arteries were hard and thickened. The aorta was atheromatous. The lungs were bound down practically all over by pleural adhesions and were very emphysematous. On section they showed much brown pigmentation. The liver weighed 48 ounces. Both upper and lower surfaces showed scarring and slight puckering, with bands of fibrous tissue running into the liver from the scars. The spleen was normal except for slight capsulitis. The suprarenals were normal. The kidneys were very granular, weighing 3 ounces each. The stomach and intestines were normal. The pancreas weighed 4 ounces; it was enlarged, being 6½ inches long and 2½ inches deep. It was very hard and very tough to the touch, feeling almost like leather. On making a longitudinal section and turning the front surface upwards two breaking-down gummata were found; the larger was seven-eighths of an inch long and three-eighths of an inch broad. A very small calculus was found in the main duct. It was about one-third of an inch in diameter, with a very irregular surface, brownish-white in colour.

Microscopically the pancreas showed marked fibrosis; in many places normal pancreatic tissue had quite disappeared. The smaller arteries showed well-marked changes in their walls, in some cases the endarteritis leading to complete obliteration of their cavity. There were also large areas of fat necrosis.

The calculus was very kindly analysed for me by Mr. W. Ffoulkes Lowe, A.R.S.M., F.I.C., and he reports as follows:—

Carbonate of lime	13·5	Soluble.
Magnesia	Trace	Soluble.
Silica	68·5	Insoluble.
Alumina	18·0	Insoluble.
Ferric oxide	Trace	Insoluble.
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"There was no trace of phosphate in either the soluble or insoluble portion, and no oxalate or sulphate. The sand appeared to form a nucleus for the carbonate of lime, and the grains appeared to be coated over with the carbonate."

The case is interesting because syphilis of the pancreas is rare, and more so in the acquired than in the congenital form of the disease. When in acquired syphilis the pancreas is affected the result is usually chronic pancreatitis, whereas in the congenital form gummata generally occur. In this case there were both chronic pancreatitis and gummata present.

Pancreatic calculi again are of great rarity. Dr. G. Newton Pitt[1] says that less than 100 cases are on record, and that in 11,000 necropsies at Guy's Hospital there were three cases only. They generally consist of carbonate and phosphate of lime, and carbonate of magnesia; in this case, however, the composition was extraordinary. There was no trace of phosphate and only a comparatively small amount of carbonate of lime, while silica and alumina composed practically the whole of the rest of the stone. The occurrence of silica in the human body is very uncommon. Thomson and Ferguson[2] report a case of intestinal sand in which the amount of silica present was 1 per cent. The only explanation I can give of the presence of silica in my case is that it may have been swallowed, for the man lived on the estuary of the Dee, and it is quite possible that in windy weather he might swallow sand in fair quantity, but why it should pass into the pancreatic duct I cannot see. Unfortunately the urine was not tested for Cammidge's reaction, as no suspicion of pancreatic disease arose during the time the man was in hospital.

Chester.

A CASE OF "STATUS LYMPHATICUS" WITH SUDDEN DEATH.

BY R. W. S. WALKER, M.B. CANTAB., M.R.C.S. ENG.,
LATE HOUSE SURGEON AT THE GREAT NORTHERN CENTRAL HOSPITAL, LONDON.

THE condition described by Paltauf[3] as a clinical entity, and termed by him the "status lymphaticus," has been brought forward prominently of late in view of the frequent occurrence of sudden death during anæsthesia in persons suffering from this disease. I believe that these notes may be of interest from the mode of termination of the case, which was referable to no special exciting cause.

The patient, a male baby, came under observation at the age of 5 months, being brought to hospital for circumcision. He was small for his age and was well nourished, but was flabby and somewhat unhealthy in appearance; so, though no signs of organic disease were detected, I gave orders that he should be brought back in two months' time, since there was no urgency in regard to operation. Two months afterwards, while on my holidays, the child was brought back. The mother was told to bring him again in a week's time

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when I should have returned. Four days after, while I was on duty, the child was brought in dead, and since I was unable to grant a certificate an inquest was held.

At the inquest the mother stated that the subject was the younger of twins and had been delicate since birth. He had been difficult to rear, and in comparison with the elder child had given rise to a great deal of trouble. He had never had definite symptoms of any disease, but had not grown well and was fretful and irritable. She had noticed nothing in particular wrong with him until the day of his death, when, while lying in the cradle, he suddenly became blue in the face and appeared to have a "convulsive fit." She wrapped a shawl round him and brought him straight to the hospital. She stated that she felt him move on leaving the house, but noticed no movements after this.

The post-mortem results were as follows:—The body was small for a child of 7 months, but was well nourished and presented no signs of wasting. The length was 26 inches, the weight 11 pounds. The changes found after death fell into two groups—changes associated with lymphatic enlargement, and changes connected with venous derangement. In regard to the former the thymus was hypertrophied, and instead of a weight of 1½ drachms, weighed ¾ ounce. There were no signs of any undue pressure on the trachea by this gland. The adenoids were enlarged, the tonsils small. There was considerable hyperplasia of the mesenteric glands, which were so pronounced as to resemble bunches of grapes. The Peyer's patches in the small intestine were markedly hypertrophied. There was but slight enlargement of the bronchial glands and of the Malpighian corpuscles of the spleen. No hyperplasia of the superficial lymphatic glands was present, and the thyroid was normal in size. There was considerable engorgement of the great veins of the brain and of the neck and abdomen. The heart was normal in every respect save that there was considerable hypertrophy of the right ventricle; the pulmonary artery was not stenosed, the pulmonary valves were normal, neither was there anything suggestive of abnormality nor disease in the lungs. On section there was considerable change in the liver, which showed well-marked signs of chronic venous congestion. This was confirmed on microscopic examination. The body in every other respect was healthy and there were no signs of rickets. Microscopic section of the thymus and of a mesenteric gland showed marked hypertrophy of the lymphoid elements.

The lymphatism, with the exception of the lack of hypertrophy of the spleen, follows, I believe, the accounts of the post-mortem findings in the status lymphaticus with some detail, and the interest of the case lies in the mode of death which can be attributed to no special exciting cause, since the child was apparently lying quietly in the cradle. No signs of mechanical pressure on the trachea were found after death.

Leicester.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

JOINT MEETING OF THE MEDICAL AND SURGICAL SECTIONS.

ON Dec. 14th a joint debate was held under the presidency of Mr. G. H. MAKINS, C.B., on "The Diagnosis and Treatment of Duodenal Ulcer." The debate was opened by Mr. B. G. A. MOYNIHAN, followed by Mr. H. COLLINSON, and Sir T. LAUDER BRUNTON, Bart., Dr. W. HALE WHITE, Mr. F. S. EVE, and Mr. HERBERT WATERHOUSE took part in the discussion, which was adjourned on the motion of the last speaker. We shall publish an account of this important debate after it has been concluded.

CLINICAL SECTION.

Gumma simulating Malignant Disease.—Exhibition of Cases.

A MEETING of this section was held on Dec. 10th, Mr. A. PEARCE GOULD being in the chair.

Mr. H. J. PATERSON read a short communication on a case of Gumma of the Breast simulating Malignant Disease. He said that a woman, aged 26 years, was admitted into the London Temperance Hospital under his care in November, 1901, suffering from a swelling in the right breast. The patient stated that she had noticed a swelling in the right breast for three months. She had suffered little or no pain, but had lost flesh considerably. She was thin and extremely anæmic and looked very ill. Occupying the whole of the upper and outer quadrant of the right breast was a hard, somewhat irregular swelling, not adherent to the skin or deep fascia, but apparently sending processes into the surrounding breast tissue. No glands were felt in the axilla. He thought that the swelling was a rapidly growing sarcoma. Under chloroform he incised the swelling. It was densely hard and macroscopically and from its feel on cutting appeared to be a carcinoma, but a piece was frozen and examined microscopically in the theatre and reported to be a sarcoma. Accordingly, he sutured the exploratory incision and performed a Halsted's operation. The patient's general condition did not improve after operation and she remained extremely anæmic. Two weeks later the suture holes became ulcerated and small red nodules appeared in the surrounding skin. Gradually the skin bordering on the line of incision became brawny and indurated, and then ulcerated. After she left the hospital the ulcerated area slowly spread, and the axillary and supra-clavicular glands became enlarged. 14 weeks after the operation he noticed a smooth, hard swelling on the sixth rib in the axillary line. Thinking that this was probably a gummatous periostitis he put the patient on mercury and iodide of potassium. The swelling on the rib quickly disappeared, and in a few weeks the ulcerated area had completely healed. Fresh sections of the breast swelling were cut, and examination of them proved that the swelling was inflammatory, probably a gumma. He saw the patient about three years after the operation, and she was then in excellent health. After that he lost sight of her, and had been unable to trace her. The case was of interest not only on account of the difficulty in diagnosis, but on account of the rarity of gummatous disease of the breast. The rapidity of growth, the absence of enlarged glands, the age and general condition of the patient, led him to think that the case was one of sarcoma, a view supported by the microscopical examination of a piece of the swelling made at the time of the operation, although from the naked-eye appearance and character of the incised swelling he thought that it was a carcinoma. The patient did so badly after the operation that he feared she had secondary visceral deposits and that the operation would not benefit her much. The occurrence of periostitis of a rib gave a clue to the real nature of the case, and appropriate treatment speedily brought about a cure. As is so often the case, there was no history or other evidence of previous syphilitic disease.

Dr. MCMULLEN showed a female patient, aged 62 years, suffering from Adiposis Dolorosa. There was a history of hæmatemesis. The condition was first noted five years ago, and was then localised to one arm and circumscribed, but it spread rather rapidly. The changes were preceded by, and associated with, pain along the nerve trunks and hyperæsthetic skin areas. At present the upper segments of both arms, the back, and the sternal region were involved. Thyroid extract had been administered with a moderate degree of improvement.—Dr. A. M. GOSSAGE described a case in which the patient seemed to be about the average from a mental point of view.—Mr. V. WARREN LOW emphasised the point that pain might precede the changes in the condition.—Dr. LEONARD WILLIAMS pointed out that the disease occurred in women after the menopause.—Dr. F. J. POYNTON discussed the treatment of these cases by thyroid, and Sir DYCE DUCKWORTH said that there was no doubt that the condition was affected by thyroid treatment and advised that the medicament should be taken at night.—Dr. J. GALLOWAY commented on a type of the disease in which there was unusual vaso-motor disturbance.—Dr. PARKES WEBER spoke on the nomenclature and incidence of the disease, and Dr. MCMULLEN replied.

Dr. W. P. HERRINGHAM demonstrated a case of Rheumatoid Arthritis with Albuminuria and with great enlargement of the liver. The patient was a boy, aged 15 years, who had been in hospital several times since November, 1905. In 1907 the liver was not enlarged. When admitted last June he was found to have the liver greatly enlarged, reaching as low as the right iliac crest; it was smooth, hard, and painless. No amyloid reaction with iodine had been seen in the casts.—Dr. POYNTON referred to some cases published in

lung involved in each attack; (3) the slight disturbance of respiration, which only once reached 40 to the minute, being usually about 28; and (4) the rapid recovery after the small dose of antipneumococcic vaccine, which it is reasonable to suppose was instrumental in bringing about the favourable result.

Cambridge.

A CASE OF SYPHILIS OF THE PANCREAS WITH A PANCREATIC CALCULUS IN THE DUCT.

BY J. GEORGE TAYLOR, M.A., M.D. CANTAB., M.R.C.P. LOND.,
HONORARY PHYSICIAN, GENERAL INFIRMARY, CHESTER.

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THE LANCET in which definite lardaceous changes had been found.—Dr. PARKES WEBER said that in nine out of ten cases the enlargement was fatty.—Sir DYCE DUCKWORTH advised full doses of iodide of potassium for the patient, and Dr. H. D. ROLLESTON said that there was a toxæmia in Still's disease which gave rise to nephritis, and that lardaceous disease was known to be due to toxæmia of various kinds, especially the suppuration of syphilis; therefore, in exceptional cases toxæmia in Still's disease might give rise to a lardaceous condition of the kidney and liver instead of nephritis.

The following cases were shown:—

Dr. J. R. LUNN: A case of Acromegaly.

Dr. R. MILNE: A case of Acromegalic Gigantism, and two cases of Achondroplasia.

Mr. A. CARLESS: Impaction of Large Calculus in the Lower End of the Right Ureter.

Mr. W. G. SPENCER: A case of Trephining for General Epilepsy.

Dr. F. J. POYNTON: Two cases of Congenital Œdema with Cardiac Defect in Mother and Daughter.

Dr. J. W. THOMSON WALKER: A case of Resection of the Bladder for Malignant Disease.

Mr. C. J. SYMONDS: Excavating Rodent Ulcer of the Face under Treatment by Radium.

Mr. A. SMITH and Mr. J. MCDONAGH: A case of Pachydermatocele.

Mr. F. S. EVE: Arterio-venous Aneurysm with Exophthalmos following an injury to the head; a case of Partial Luxation of Odontoid Process; and a case of Transverse Fracture of both Patellæ, with much separation of fragments, treated by operation.

Dr. PARKES WEBER: A case of Recklinghausen's Disease and a patient a few months after omentopexy and peritoneal drainage for Chronic Ascites connected with Hepatic Cirrhosis.

Mr. C. A. BALLANCE: A patient on whom he had performed the operation of Trephining after Fracture of the Base of the Skull.

Mr. J. D. MALCOLM showed a patient who had undergone Cholecystduodenostomy for Acute Emaciation. The nutrition of the patient had steadily improved since the operation.

LARYNGOLOGICAL SECTION.

Exhibition of Cases and Specimens.

A MEETING of this section was held on Dec. 3rd, Dr. J. DUNDAS GRANT, the President, being in the chair.

The PRESIDENT showed the two following cases: 1. A case of Secondary Specific Pharyngitis in a woman aged 22 years, who, although quite healthy looking, had been sent to Brompton Hospital as presumably suffering from tuberculosis. On both faucial pillars there was symmetrical superficial ulceration, more marked on the left side, and of two months' duration. There was neither history of syphilis, rash, nor post-cervical glandular swelling. Scrapings from the diseased surface revealed spirochæta pallida. 2. A man, aged 41 years, who was a considerable smoker, and showed a peculiar Erythema of the Soft Palate of three months' duration. A bright red rash was distributed over the soft palate, the hard palate having a white sclerotic appearance. —In the discussion an opinion was expressed that the condition might be due to pyorrhœa alveolaris, which was also present. The patient had been in the habit of smoking 2 ounces of tobacco a week from a short pipe.

Mr. W. H. KELSON showed a case of Frontal Sinus Disease with Necrosis in a man aged 33 years. A year ago the patient was operated upon for suppuration in the left maxillary antrum, and immediately afterwards, owing to swelling in the frontal region, the anterior necrosed walls of the sinus and large sequestra were removed therefrom. Since then several small portions of dead bone have been removed.

Mr. H. BETHAM ROBINSON showed a man, aged 63 years, with a Flattish Ulcer creeping from the inner side of the left arytenoid cartilage on to the posterior part of the left cord, the posterior two-thirds of which showed some heaped-up granulations, leaving the left side free. Mobility was normal. The right cord was healthy. The suggested diagnosis was senile tuberculosis.

Dr. SCANES SPICER showed a model to illustrate the variation in effect of costal (or back) and abdominal (or belly) breathing on the stresses, strains, and frictions in the throat and larynx, more especially of the cricoid cartilage on the spinal column, and also the transverse axis of respiratory rotation of the cricoid on the thyroid cartilages. Dr. Spicer explained in detail how he arrived at the conclusion that the basic factor in causation of disease in the human body, and the production of disorders of the nose, throat, larynx, and voice, was the manner in which the respiratory function was used.

Mr. HERBERT TILLEY showed the two following cases: 1. Tuberculous Ulceration of the Epiglottis treated by amputation of the diseased portion. The patient was a man, aged 43 years, who, in March, 1907, had suffered slight pain on swallowing, loss of flesh, and profuse sweating at night. He also had physical signs of pulmonary tuberculosis with evening rise of temperature. The stump of the epiglottis was now quite healed and the patient had gained nearly three stones in weight since the operation. 2. The larynx of a man, aged 78 years, whose right vocal cord was removed for Epithelioma in September, 1896. From that time the patient enjoyed good health till a month ago, when he succumbed after tracheotomy performed (in other hands) for dyspnœa. A well-developed epitheliomatous ulcer now occupied the left cord, the original right cord and arytenoid remaining quite healthy.—In the discussion the generally expressed opinion was that this was a clear case of re-infection after recovery from the original disease.

Dr. STCLAIR THOMSON showed a case in which there had been Complete Stenosis of the Larynx after Diphtheria (for which tracheotomy was performed) in a boy when aged 1 year and 2 months, but complete recovery had now been obtained by intubations spread over three years. Dr. Thomson's object in showing the case was to illustrate (1) how laryngeal stenosis from diphtheria might occur, even although a satisfactory low tracheotomy had been carried out; and (2) the success of the latter in complete occlusion of the glottis when combined with intubation, the result being seldom equalled by laryngo-fissure and laryngo-tracheostomy.

Dr. G. WILLIAM HILL showed two cases treated by application of radium bromide. The first patient had suffered from a malignant tumour of the neck which manifested continued decrease of the swelling after the application of 50 milligrammes for 22 hours. The second patient, who suffered from carcinoma of the gullet, had received six applications since July last, and could now swallow almost anything, instead of only purées and other liquids as formerly.

Other cases and specimens were shown by Mr. CHARTERS J. SYMONDS, Dr. GEORGE C. CATHCART, Mr. HAROLD S. BARWELL, Dr. W. S. SYME, Dr. JAMES DONELAN, and Mr. P. R. W. DE SANTI.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION.

Phosphorus Poisoning.—The Lactic Acid Bacillus.

A MEETING of this section was held on Dec. 7th, Professor A. R. CUSHNY, the President, being in the chair.

Mr. H. WIPPEL GADD read a report upon Kangalugi Root.

Mr. R. G. HANN and Dr. R. A. VEALE contributed an account of a case of Phosphorus Poisoning, and showed pathological specimens obtained therefrom. The drug had been taken as an abortifacient, and besides the more usual fatty degeneration the viscera showed numerous large hæmorrhagic extravasations. In addition there were enormous subcutaneous hæmorrhages covering a large part of the superficial extent of the body.

Dr. GEORGE HERSCHELL opened a debate upon the Therapeutic Value of the Lactic Acid Bacillus. He emphasised the necessity of selecting suitable cases and of using an active preparation, and said that only two or three of the solid preparations on the market contained the Bulgarian bacillus. The conditions suitable for treatment were those where there was abnormally great putrefaction of proteids in the alimentary canal, with auto-intoxication from the colon. No good results were to be expected where the symptoms were due to an excessive fermentation of carbohydrates. He had met with marked success in the treatment of the former cases.—Dr. F. W. GOODBODY said that he had searched for evidence on the chemical side of good results, but had met, to a great extent, with negative results. Aromatic sulphates were not appreciably diminished.—Dr. VAUGHAN HARLEY said that he agreed with the opinion of Dr. Goodbody. The evidence of changes in the composition of the

fæces was disappointing, considering the improvement which had occurred in the symptoms. He thought that these good effects were psychological in origin. His experience was that improvement occurred in functional dyspepsias but not in those that were associated with organic change.—Dr. W. BULLOCH said that he had examined over 20 specimens of the tablets placed on the market and none had showed the presence of active bacilli. They might be each and all discarded as worthless.—Dr. J. W. H. EYRE said that working with his own strain of bacilli he had had success in treating certain infections of the colon with pathogenic bacteria. Successive cultivations from the fæces had shown rapid diminution of the pathogenic micro-organisms.—Dr. ROBERT HUTCHISON expressed himself as profoundly sceptical of the good results claimed, and this feeling was strengthened by what he had just heard. To diminish intestinal putrefaction he would rather trust to small doses of calomel. He hoped that the discussion would go far to suppress a dangerous craze.—Dr. C. H. MILLER said that he had used the method in a series of cases of rheumatoid arthritis. The arthritis benefited little, but the general health of the patients improved greatly.—Dr. A. F. HERTZ said that he was sceptical of the existence of auto-intoxication from the bowel. He related a case of streptococcal infection of the bowel which had resulted in rapid recovery when soured milk was given. Simultaneously the streptococci disappeared from the fæces. He thought that such bacterial control was necessary.—Dr. W. LANGDON BROWN said that he had certainly seen indicanuria disappear during treatment by this means.

SECTION OF ANÆSTHETICS.

Lymphatism.

A MEETING of this section was held on Dec. 3rd, Mr. RICHARD GILL, the President, being in the chair.

Mr. H. BELLAMY GARDNER and Dr. R. SALUSBURY TREVOR communicated a paper on Lymphatism, with specimens and lantern illustrations. The importance of the subject as bearing upon the explanation of sudden death in children and adults was pointed out. The normal weight of the thymus gland, according to Dr. L. S. Dudgeon's researches, was stated to be from 7 to 10 grammes. The fluid expressible from the gland post mortem was normally sterile and of an acid reaction. Dr. McCardie had stated that Paltauf in 1889 first pointed out that many cases of sudden death, otherwise unexplained, were found post mortem to have enlarged lymphatic glands, enlarged thymus and spleen, hypoplasia of the aorta, and swelling of solitary follicles of the intestine and of Peyer's patches. In infants and young children death was often preceded by fits of stridor, and ended in sudden asphyxia; in older children and adults respiration ceased without obvious dyspnœa, and the heart failed immediately. Enlarged thymus was often also found in association with rachitis, exophthalmic goitre, myasthenia gravis, and leukæmia. Photographs of frozen sections of the normal newborn infant were shown to demonstrate the position of the thymus gland in relation to the œsophagus, trachea, innominate artery and aorta at the levels of the sixth cervical, first, third, fourth, and fifth dorsal vertebræ respectively. Six cases of sudden death presenting enlarged thymus gland and general lymphatism were then related. 1. A boy, aged 13 months, died suddenly while a physician was at the bedside. There was no sign of asphyxia. Respiration and circulation stopped simultaneously. 2. An infant, aged 9 months, with recently healed eczema, died within an hour after onset from tracheal stridor, with asphyxial symptoms. 3. An adult, aged 29 years, a congenital imbecile, died suddenly in a tepid bath from respiratory and circulatory failure. 4. A female, aged 30 years, who died suddenly under a local anæsthetic (tropacocaine) for the removal of a small cyst in the neck. Respiratory cessation; no dyspnœa. Heart failed later. 5. A male, aged 14 years, died at the third inspiration of ethyl chloride given for the adenoid operation. There was no respiratory obstruction. Respiration failed first, and then the heart. 6. A male, aged 13 years, died during an operation for adenoids and tonsils under C_2E_2 mixture. There was no respiratory obstruction. Respiration ceased while the corneal reflex persisted. This negatived overdose of anæsthetic. The circulation failed rapidly. The thymus weighed 56 grammes. There were enlarged lymphatic glands in the infra-tracheal group, mesentery, and inguinal regions, enlarged Peyer's patches and solitary follicles throughout the intestine. This was a grossly marked case, and was illustrated by 12 lantern-slides of the parts affected, explained and demonstrated by Dr. Salusbury Trevor. A history of chronic eczema, a severe attack of measles, and abscess in the middle-ear were afterwards disclosed. A chronic toxæmia had been suggested as the cause of the general lymphatism by several writers. Gallois has suggested that this was a mild septicæmia due to swallowed muco-pus from the naso-pharynx. In the present state of knowledge these sudden deaths presented a problem worthy of most active research on the part of the medical profession. The means of diagnosis pointed out by A. S. Warthin might apply in well-marked cases—i.e., percussion of the thymic area over the manubrium sterni, yielding unusually wide dulness, radiographic examination for wide thymic shadow above the heart, palpable cervical, axillary, or inguinal glands. Mr. Bellamy Gardner particularly dwelt upon the importance of discovering (1) the cause of these sudden deaths; (2) in what subjects to suspect lymphatism; (3) how to diagnose it; (4) how to treat it; and (5) how to safely conduct anæsthesia in such subjects.

Dr. DUDLEY W. BUXTON said that the subject of the status lymphaticus in its relation to deaths under anæsthetics was complicated by the fact that great confusion existed in the clinical records of such cases. The physical signs were so confusing that one was led to believe that the conditions called lymphatism, thymic death, and thymic asthma were, in fact, variants from some common dyscrasia, the nature of which was at present unknown. Theorising was inevitable, and the theory that these conditions were but symptoms of different stages of some toxæmia, probably a lymphotoxæmia, appeared to the speaker to supply the best explanation of the central malady. The mechanical theory of death was certainly untenable, as cases in which definite pressure by the thymus like those in which thymic asthma existed presented such well-marked symptoms that any general anæsthetic would be withheld. The cases in which no symptoms existed, but which revealed lymphatic hyperplasia, varied in degree and no doubt were very common. Until they knew the incidence of such conditions in persons who survived anæsthetics they could not say whether they were indeed more likely to die during narcosis. He suggested that a subcommittee should be appointed to study the subject. What appeared to be clear from the record of the cases of death under anæsthetics was that the patients were suffering from a depressed vitality, the signs of which Dr. Buxton enumerated, and that their blood pressure was abnormally low, due in part to the state of the heart muscle. Myocardial disease was a constant accompaniment of, if not a part of, lymphatism. It followed that these persons could not take the usual and safe strength of chloroform without grave risk. Asphyxial complications, trivial in most cases, caused serious results in them. Hence his insistence upon giving exceptionally weak vapours and always supplying oxygen with them. Cases were on record in which the patient who eventually died under chloroform had survived it many times before. Probably in the one instance more, and in the others less, powerful vapours had been employed. He thought that all persons who conceivably were of this dyscrasia should be dealt with on the lines indicated, whether they appeared robust or as in the exophthalmic goitre cases they gave evidence of definite disease which probably interfered with normal respiration. It was safer to assume a disease which might not be present than to overlook one which presented no clear objective signs.

Dr. LEONARD WILLIAMS believed that status lymphaticus was due in most cases to a want of work on the part of the thyroid gland, and that the other minor glands were enlarged to make up for the lack of efficiency of the thyroid.

Dr. B. H. SPILSBURY said that too much emphasis had been laid on the size of the thymus gland; a thorough microscopical examination of the structures was essential, the naked-eye appearances not being sufficient evidence on which to form a diagnosis. The heart muscle was always degenerated to some extent in these cases, either fatty degeneration or brown atrophy, or a combination of the two being an essential feature of status lymphaticus. Dr. Spilsbury denied that the condition was necessarily congenital; in some cases he had

found distinct evidence that the thymus gland had atrophied in the ordinary way during childhood and grown again later in life. Of all the cases of death during anæsthesia in which he had made a post-mortem examination about 75 per cent. had shown signs of status lymphaticus, and this condition is, in his opinion, a more important factor in causing death than the anæsthetic employed.

Dr. F. W. HEWITT said that before putting deaths down to status lymphaticus, they ought to consider whether the individual cases could not be explained on other grounds. In many cases an asphyxial factor was present before the sudden death occurred; but this might be so slight as to pass unobserved. He did not think that the heart was really an important factor in causing death. If the respiration was kept absolutely free, and the anæsthesia was not too profound, it was nearly always possible to avert an accident.

MEDICAL SOCIETY OF LONDON.

Anatomy of the Heart.—Auricular Fibrillation.

A MEETING of this society was held on Dec. 13th, Dr. SAMUEL WEST being in the chair.

A paper by Professor ARTHUR KEITH and Dr. IVY MCKENZIE, entitled "Recent Researches on the Anatomy of the Heart," was communicated; this will be published in full in a forthcoming issue of THE LANCET.

Dr. THOMAS LEWIS delivered an address on Auricular Fibrillation and its Relationship to Complete Irregularity of the Heart as it Occurs Clinically. He spoke of the two groups of cases with which complete irregularity is particularly associated—namely, advanced mitral stenosis and general degeneration of the cardio-vascular system. He gave the general clinical features, the type of sphygmographic tracing, the venous pulse curve, and laid particular stress on the absence of all signs of normal auricular contraction. He then referred to certain phenomena indicating activity of the auricle, more particularly hypertrophy of the auricle, found at necropsy, and the reappearance of signs of normal auricular contraction in paroxysmal cases of the affection at the time when the normal rhythm returns. He next turned to the electro-cardiographic evidence of the condition. The change from the normal type of curve to that of the type met with in complete irregularity was described. It was stated that in this condition the curve consists of two parts, one attributable to ventricular activity, and the remainder of the curve was constituted of irregular waves the result of auricular activity and replacing the normal auricular peak. These waves are known to result from auricular activity because they appear in their maximal form when leads taken directly from the chest wall lie directly above the right or superficial auricle. The pure ventricular curve can be similarly obtained by leads suitably placed in relation to the left ventricle. Dr. Lewis referred to two forms of auricular activity—coördinate and incoördinate. He noted the evidence for the absence of coördinate contraction, and concluded that incoördinate contraction was present as the result of the information afforded by these direct leads. Finally, a comparison was made between the records yielded by complete irregularity in man and auricular fibrillation in the dog. 1. Dealing first with the radial pulse, the following features in common were described: complete irregularity, increased rate, and an absence of relationship between the size of the beats and the pauses preceding them. 2. He dealt next with the venous curves, and showed that in both dog and man a ventricular form is present and small oscillations of pressure occurring in the veins are common to both when the pulse is slow. 3. He next compared the electric cardiograms from the two conditions. Slides were shown demonstrating how identical the curves were from dog and man, and the following special features which the curves presented in common were emphasised: the presence of the first ventricular variation R., showing the supra-ventricular origin of the beat in each case, its increase in size as compared with the normal condition, the absence of relationship of its height to preceding pauses and to sizes of corresponding arterial beats, and the presence of the curious waves replacing the normal auricular waves, waves which can be directly shown to proceed from the fibrillating auricle in the case of the dog.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

President's Address.—Hypertrophic Cirrhosis of Liver with Alcoholic Paralysis.—Exhibition of Specimens.

A MEETING of this section was held on Nov. 12th, Mr. A. H. BENSON, the President, being in the chair.

The PRESIDENT delivered an address on the subject of Trachoma.

Dr. H. C. DRURY read notes of a case of Hypertrophic Cirrhosis with Alcoholic Paralysis, the patient being a large stout woman, aged 42 years. She had had 20 pregnancies, with 13 living children and 7 miscarriages, these latter having been irregularly distributed between the live births. There was no history or evidence of syphilis. She was admitted to hospital in a state of alcoholism, and she had an alcoholic history. She complained of weakness and "pins and needles" in her feet and hands. There was an abrasion on both knees from her legs having "given under her" on getting out of bed. Her mind was quite clear. The lungs were healthy. The heart was strong and regular, but there was a mitral systolic murmur. There was not, however, any evidence of failing compensation. The movements of the limbs were good, and the hands could be fully extended, but the muscular action was weak. The muscles of the arms, especially of the extensors, were painful to pressure; those of the legs were in a similar condition, and attempts at voluntary flexion caused pain in the calf. The reflexes were absent, while sensation, though perverted, was still present. It was evident that the patient was in an early stage of peripheral neuritis. This gradually developed from day to day until there resulted complete "drop wrist" and "drop foot." She could draw her legs up in bed, but could not extend them again. The abdomen was very large and pendulous; at the umbilicus was a tumour of about the size of a hen's egg, which was the empty thickened sac of an old-standing umbilical hernia. The liver and spleen were both greatly enlarged; there was no ascites. Jaundice was present, the conjunctivæ being of a bright yellow colour, but the colouration of the skin was such that it might easily escape notice. The urine was high coloured and clear, without albumin or sugar; it gave the iodine reaction for bile. The fæces were lighter than normal in colour, but contained bile colouring matter. The liver was very large, reaching in the parasternal line more than two hand breadths below the lower border of the ribs. It was readily palpable, being smooth and firm, with a sharp hard margin, but of normal shape, and painless. Simple hypertrophy was excluded by the extreme firmness of the organ and the remarkable sharpness of the edge; it was, moreover, larger than was likely to be the case in simple fatty liver. Amyloid disease was excluded by the absence of any cause for such, the history of the pregnancies being alone sufficient to preclude syphilis. All the symptoms indicated hypertrophic or biliary cirrhosis. The patient had a continuous but quite irregular febrile temperature for some five days, and then (Oct. 10th) developed a profuse diarrhœa without assignable cause. She became rapidly weak, fell into a heavy lethargic or semi-comatose state, and died rather suddenly on Oct. 24th. The great enlargement of the liver having the characters already described, the enlarged spleen, the jaundice without ascites, the irregular pyrexia, the profuse diarrhœa, the bile-coloured fæces, and the great asthenia passing into semi-coma and death, together produce the clinical picture described by Hanot, which has been named hypertrophic, or biliary, or insular cirrhosis of the liver.

Professor A. C. O'SULLIVAN gave the following account of the post-mortem appearances: "The liver weighed 7 pounds 11 ounces. The increase in size was fairly uniform in both lobes, but was much greater antero-posteriorly than from side to side. Its capsule was somewhat thickened; it was finely granular on the surface and of a light greenish-yellow colour. On section, the connective tissue was seen to divide the liver up into small areas about as big as, or smaller than, a lobule. Under the microscope there was a great quantity of connective tissue arranged on the whole with a tendency to surround lobules. It also sent delicate strands everywhere in between the liver cells. There was extensive fatty

infiltration and the liver was stained green in places with bile pigment. The connective tissue outside the lobules contained great quantities of newly-formed bile ducts. A section of the external cutaneous nerve showed extensive degeneration, all the larger fibres being degenerated; the myelin and axis cylinders were broken up and the nuclei of the sheath were increased."

Dr. J. B. COLEMAN exhibited Viscera of a woman, aged 34 years, who died with symptoms of gangrene of the lungs, consecutive to perforated gastric ulcer, the sinuous track of which led, by a perforation in the diaphragm, into an abscess cavity between the diaphragm and the base of the left lung. The lower lobe of that lung contained several abscesses and gangrenous areas.

SECTION OF MEDICINE.

Spleno-medullary Leukæmia.—Sane Hallucinations.

A MEETING of this section was held on Nov. 26th, Dr. WALTER G. SMITH, the President, being in the chair.

Mr. MAURICE R. J. HAYES read a paper on Spleno-medullary Leukæmia Treated by X Rays. The case was that of a woman, aged 42 years, married, no children. Symptoms directly referable to her disease began in August, 1906, but the enlargement of her spleen was first apparent in December, 1908. In February, 1909, when X ray treatment was commenced, she was very anæmic and wasted; she suffered much from breathlessness and palpitation, her legs were swollen and she had hæmic murmurs. Her spleen extended for two inches to the right of the middle line, for three inches below the umbilicus, and to the level of the crest of the left ilium. The liver was slightly enlarged; there were no enlarged lymph glands. For purposes of irradiation the superficial area of the spleen was divided into four circular areas, 10 centimetres in diameter, and each one was exposed in turn, a hard tube being used. The average duration of each exposure was 18½ minutes. From Feb. 20th to Nov. 25th, 1909, 22 exposures were given. She had no treatment during July, August, September, and October, when she felt very much improved and was able to perform her household duties. Her spleen had reduced in size till it was palpable for 2½ inches below the left costal arch, and it was freely moveable. Palpitation, breathlessness, and œdema had disappeared, and she looked very well; the anæmia was better. In the end of October her symptoms returned, and X ray treatment was resumed in November, to which she is responding. She has had no medicinal treatment whatever for her disease. She at no time in the course of treatment suffered from any general or local symptoms which might be referred to the X ray, save a slight dry dermatitis in April, when irradiation was suspended for three weeks. The reports on the blood-films, which were examined by Professor E. J. McWeeney and Dr. W. D. O'Kelly, are as follow:—

	Reds.	Whites.	Myelocytes per cent.	Hæmoglobin per cent.
Feb. 15th	3,100,000	566,000	20 of whites	60
March 1st	—	704,400	—	—
,, 23rd	3,528,000	209,333	10 ,,	63
April 5th	4,368,000	197,000	17 ,,	58
,, 24th	4,224,000	172,000	7·3 ,,	63
June 21st	5,072,000	36,000	8 ,,	75
Nov. 15th	3,488,000	168,750	14·3 ,,	77

—The PRESIDENT, Dr. E. J. M. WATSON, Professor MCWEENEY, Dr. W. G. HARVEY, and Dr. C. M. BENSON discussed the case.

Dr. A. R. PARSONS quoted a case of his own which was almost identical with Dr. Hayes's case. She was 55 years of age, and had had a prolonged course of arsenic without any improvement. The condition of her white cells was almost identical at the end of the treatment with what it had been at the beginning. After the tenth or twelfth application of the X rays a marked improvement took place in her blood, and the spleen decreased to such an extent that it was almost impossible to palpate it. She went away feeling perfectly well but returned within a year's time with the spleen increased and a relapse in the condition of the blood. She again received benefit from the rays but died in six months. It was quite certain that the rays effected a diminution of the spleen, but how it was brought about he did not know. The improvement in the blood was not brought about by the destruction of the white cells, although the rays might inhibit their formation.

Dr. R. J. ROWLETTE said he had performed a post-mortem examination last year on the body of a patient who had died from heart disease while under X ray treatment. The leukæmia was discovered when she was put to bed in hospital, and as far as it was concerned she had improved considerably. In the microscopic examination of the spleen he did not find any of the patches which were said to be typical of the disease, and it was possible that the X rays had caused their disappearance.

Mr. HAYES, in reply, said he believed the woman's present condition to be due altogether to the X ray treatment. Out of 63 cases collected as treated by the rays only four were alive in from three to six years after the primary symptoms, so that it did not promise very well for the patient.

Dr. W. R. DAWSON read a patient's autograph account of Sane Hallucinations.

MEDICO-LEGAL SOCIETY.

A meeting of this society was held on Nov. 23rd, when Dr. J. E. Risien Russell read a paper on the Effects of Traumatism upon the Nervous System. Although he did not include the effects of gross lesions of the nervous system, he did not confine his remarks to the subject of traumatic neurasthenia, but rather attempted to show that although no evidence of structural damage of the nervous system might be determined immediately after an accident, subsequent changes might take place in the nervous system which could give rise to signs which are regarded as evidence of organic disease. The way in which these symptoms and physical signs developed after an accident made it difficult to escape from the belief that the altered condition of the nerve elements is the outcome of the accident. He emphasised the fact that the symptoms of traumatic neurasthenia might follow an accident of the most trivial kind, and considered that the conditions under which the accident is sustained have more to do with the result than the actual severity of the injury, provided no actual structural damage has been done to the nervous system. In short, the mental shock sustained is an important factor in the production of the symptoms. In his experience the age of the patient and the state of the blood-vessels are other important factors which often influence the prognosis unfavourably, but nothing is more difficult than to say how long a case of traumatic neurasthenia is likely to take to get well, even after trivial injuries. How far antecedent disease should be allowed to influence the question of compensation was next considered, as was the question of how far a plaintiff for damages would prejudice his case by refusing treatment. He supposed that there could be no doubt as to the result if it could be shown that the claimant deliberately aggravated his condition by some wilful neglect or similar act, but the refusing of treatment could not be viewed in the same way, for it was conceivable that the suggested treatment might not only be uncongenial to the patient but actually harmful to his condition. He advocated the Weir Mitchell or "rest-cure" treatment in these cases, and advised that, when possible, the treatment should be conducted in homes in the country devoted to the care of nerve cases, and was further of opinion that there is great advantage in placing such patients under the personal influence of a resident medical officer whose whole time could be given to the care and management of the patients. Admirable as was this treatment, it could not be said that a course of the kind for a certain number of weeks or even months would necessarily result in cure, for he had known many cases in which no question of compensation arose and in which, nevertheless, prolonged treatment on this and other approved lines failed to bring about improvement in the patient's condition. Dr. Russell next dwelt on the importance of being able to recognise the features of a malady that could not be reasonably ascribed to an accident and which may have existed before the injury and which, even if it had developed subsequently, must yet be regarded as independent of the trauma. Although organic changes could result from injuries to the nervous system, the clinical picture of a very few diseases could be thus established, so that the determination of certain diseases made it impossible to associate the injury with them as cause and effect. In conclusion, he advocated the extension of the system of consultations between the medical men who appeared on the opposite sides before the case came into court, and he hoped that it might be found

possible for the society to use its influence to promote what he considered was a much needed reform in regard to medical evidence in the courts of law. He spoke in complete ignorance as to what was possible in this way, but he could not help feeling that it would be a good plan if medical assessors could be appointed to assist the judge and jury in their deliberations in cases in which medical evidence was called. There could be no doubt that this reform would be of great advantage to the medical profession, and he believed that it would also be of advantage to the public, but he could not, of course, venture to express an opinion as to how the legal profession would view any such alteration of the present mode of procedure.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on Dec. 1st, Mr. W. Coates, the President, being in the chair.—Dr. E. S. Reynolds read a communication on the Importance of Rectal Examination in Medical Practice, referring only to those cases in which symptoms were not obviously due to rectal mischief but in which rectal examination was essential before a correct diagnosis could be made. He alluded specially to three groups of cases and related illustrative examples: (*a*) Profound and even fatal progressive anæmia due to slight but repeated rectal hæmorrhages; (*b*) malignant disease of the rectum or in the pelvis; and (*c*) pelvic abscess secondary to appendicitis.—Dr. J. Barnes Burt read a paper on the Etiology of Heberden's Nodes, which was an attempt to prove that Heberden's nodes are compensatory changes brought about by the constant use of the terminal phalangeal joints when the ligaments of those joints are weakened by disease or degeneration. The paper comprised: (*a*) A description of the five different views relating to the origin and clinical significance of Heberden's nodes. (*b*) An analysis of 40 consecutive cases showing the following points: (1) Heberden's nodes occasion a variety of conditions which are in no way connected with one another; (2) they are always preceded by some condition which leads to weakening of the joint ligaments; and (3) the more the joint is used the greater the liability to these nodes. Thus if the ligaments are weakened constant use of the terminal phalangeal joint leads to the last phalanx being tilted backwards because opposition to the thumb is the chief action of this phalanx. The posterior margins thus receive an extra degree of pressure and will therefore hypertrophy, the pressure being intermittent. The hypertrophy of the most prominent portions of the margins forms Heberden's nodes; in other words, Heberden's nodes are compensatory changes. Chronic gout, rheumatoid arthritis, senile degeneration, and wear and tear may all be important factors in the production of this disease; but just as hypertrophy of the heart is a compensatory change occurring in a variety of conditions so Heberden's nodes are a compensatory change and not a sign of one specific disease.—Dr. H. H. McNab read a paper on the Importance of Early Treatment in cases of Convergent Strabismus, pointing out the value of Claud Worth's researches and emphasising the necessity of curative measures being undertaken at the earliest possible date after the appearance of the squint.

UNITED SERVICES MEDICAL SOCIETY.—A meeting of this society was held on Dec. 8th at the Royal Army Medical College, Grosvenor-road, S.W., Lieutenant-Colonel W. G. Macpherson, C.M.G., R.A.M.C., being in the chair.—Fleet-Surgeon F. H. A. Clayton, R.N., read a paper entitled "Notes on Seven-day Fever of Eastern Ports: its Occurrence in the Navy and its Relationship to Dengue." It was pointed out that so far as the navy is concerned Bombay was the principal source of cases of fever of this particular type. A brief sketch of the symptoms and of such facts bearing on causation as are at present known was given and the results of investigation into its occurrence in the East Indian Squadron for a period of ten years were then detailed. This showed that in the Naval Defence Flotilla permanently stationed at Bombay outbreaks seemed to occur at almost any time of year and were apparently chiefly dependent on the supply of susceptible individuals. In the smaller ships, on the other hand, which were docked for a considerable time, outbreaks always coincided with docking, and the possibility of its occurrence seemed to vary with the length of time in dock and the number of white men on board. The larger ships in Bombay harbour for considerable periods but only docking for a few days were practically immune except in one instance. The analogy which existed therefore between the occurrence of this disease and that of malaria in ships was then discussed, and the conclusion arrived at that the facts suggested convection by blood-sucking flies. Various points which might appear to argue against this conclusion were dealt with, and the history of an outbreak in 1907 was given which offered some support to it. The question of the variety of fly likely to be responsible was discussed, and C. fatigans was, on the whole, held to be the most probable. The second part of the paper was devoted to a consideration of the Relationship of Seven-day Fever to Dengue. The history of the disease was briefly related and Megaw's papers were referred to. Instances were given of the occurrence at the termination of epidemics of cases having some of the characteristics of both diseases, and a history of an outbreak was then related in which what appeared to be originally seven-day fever assumed, following on the change of locality, many of the chief characteristics of epidemic dengue. In the concluding part of the paper reference was made to some of the possible factors which operate in the conversion of the sporadic to the epidemic form of dengue. The final conclusions come to were—that on the whole naval experience suggested the convection of seven-day fever by a biting insect, possibly C. fatigans; that the disease is in reality a sporadic form of dengue, its epidemic extension being promoted by certain unrecognised factors.—In the discussion which followed it was generally agreed that a good case had been made out for regarding seven-day fever as a sporadic form of dengue. Questions were asked as to the character of the pains, the occurrence of the rash, the prevalence of seven-day fever on the China station, whether observations on the Widal reaction had been carried out in cases of the disease, and if immunity followed attack.—Among the speakers were Major W. S. Harrison, R.A.M.C., Lieutenant-Colonel Sir W. B. Leishman, R.A.M.C., Major S. L. Cummins, R.A.M.C., Fleet-Surgeon J. A. Keogh, R.N., Deputy Inspector-General S. T. O'Grady, R.N., Staff-Surgeon M. H. Knapp, R.N., Staff-Surgeon R. St. G. Bond, R.N., and the President.—Fleet-Surgeon Clayton replied and the proceedings terminated with a hearty vote of thanks to him.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Nov. 26th, Dr. J. B. Hellier, the President, being in the chair.—Mr. Leonard A. Rowden read a paper, illustrated with lantern slides, on the X Ray Diagnosis of Renal Calculus. He dwelt on the importance of using a fluorescent screen and not a photographic plate for the purpose of diagnosis, pointing out that if the plate alone was relied on, many calculi might be overlooked. He also insisted on the area of illumination being cut down to its smallest possible limits so as to do away to a large extent with the general fogging of the picture produced by the secondary radiations. Out of a series of 400 examinations 92 cases were operated upon and the diagnosis was found to be correct in 95·4 per cent.—Dr. A. H. Bampton read a paper on the Medical Aspect of Complete Suppression of Urine, and narrated a case where there was complete suppression for ten days, with but slight symptoms up to the eighth day; there was neither clouding of the brain, nor acceleration of the breathing and pulse, nor gastro-intestinal disturbance; the temperature was also subnormal. The patient died unconscious, but without convulsions, on the eleventh day. At the post-mortem examination the bladder was found empty and there was no mechanical obstruction in the urinary tract. The kidneys showed interstitial nephritis. Dr. Bampton said that similar cases had been reported by Sir Dyce Duckworth and Professor W. Osler, and he discussed various theories to account for the arrest of physiological function—namely, (1) the stop-cock action of arterial supply, (2) the "choked-filter" theory, and (3) the retention of toxins which paralysed the renal epithelium.—Mr. B. G. A. Moynihan showed an Enlarged Prostate, weighing 24½ ounces, removed in June last. The patient had suffered for nine months from symptoms of prostatic obstruction. A large tumour was palpable above the pubes. The prostate was removed by the suprapubic route. The wound was slow in healing, but was closed in seven weeks.—Dr. A. Sharp showed two cases illustrating Tertiary Manifestations of Syphilis of the Larynx. One showed a diffuse infiltration involving the ventricular bands and inter-arytenoid regions

and causing troublesome dyspnœa and loss of voice. The other case showed a typical tertiary ulcer—the remains of a disintegrating gumma—involving the true and false cords of the left side. It was pointed out that potassium iodide was much more efficient in circumscribed than in diffuse infiltrations, and that in the latter mercurial inunction with iodide gave the best results.—Mr. H. Collinson showed a Circular Tin Disc half an inch in diameter removed from the larynx of a child, aged 4 years. The child was admitted to a hospital late at night when skiagraphy was impossible. High tracheotomy was performed and the foreign body was found to be tightly impacted below the glottis.—Mr. Walter Thompson showed a Sloughing Testis following Influenza.—Dr. E. F. Trevelyan showed a case of Pachyderma Laryngis in early Pulmonary Tuberculosis.—Other cases and specimens were also shown by Mr. H. de C. Woodcock, Mr. H. Secker Walker, Dr. T. Churton, Dr. O. C. Gruner, Dr. T. Wardrop Griffith, and Mr. A. L. Whitehead.

Reviews and Notices of Books.

Mosquito or Man? The Conquest of the Tropical World. By Sir RUBERT BOYCE, F.R.S. London: John Murray. 1909. Pp. 267. Price 10*s.* 6*d.* net.

THE direful importance of flies as disseminators of disease has been fully realised for only a few years. Although the discovery of the connexion between various diseases and the presence in the body of definite bacterial organisms naturally led to the inference that these might be carried from person to person or from infected localities by flies, comparatively little weight seems to have been laid upon this just inference. The undoubted sources of danger in contaminated drinking water, milk, and other articles of diet engaged attention rather than the possible living carriers of deadly germs. It is probably the recent investigations upon malaria and the proof that the malaria organisms pass certain stages of their existence within the bodies of mosquitoes, and perhaps still more the later researches upon sleeping sickness and other diseases caused by the presence in the blood of trypanosomes, which again directed attention to the general importance of diptera as sources of other kinds of infection. For while the mosquitoes are intermediate hosts of the malaria protozoon, it is not so clear that the trypanosomes pass any stage of their existence as actual parasites of the tsetse fly; it would rather appear that they are merely conveyed by this fly from one infected animal to another until then non-infected animal. This accidental transference is believed to play a large part in the dissemination of disease; plague, for example, may be transferred through the intermediary of fleas, and typhoid fever through the common domestic fly. All of these matters are dealt with in an interesting and convincing way by Sir Rubert Boyce, who, from his connexion with the Liverpool School of Tropical Medicine, has had much opportunity of gathering accurate first-hand knowledge.

The book is meant for the layman, from whom it demands in the way of preparation for study merely that acquaintance with scientific method and progress which is now so generally diffused among the reading public. The historical method adopted by the author shows how enormous has been our progress in so complex a subject, and proves absolutely that the most important part played in the acquisition of this immense mass of information has been in the domain of zoology. And yet in the face of this patent fact the study of zoology was at one time in considerable danger of being eliminated from the medical curriculum, while it is still reduced to its lowest possible dimensions in an overcrowded curriculum. A fair weighing of the topics dealt with by Sir Rubert Boyce leaves no room for doubt as to the value of a training in all branches of zoology. In writing on the "proof of the mosquito doctrine" of malaria the author remarks: "With these facts proved it is clear that in order to prevent malaria it was necessary to protect man from the infected mosquito and also to wage war against it. Now, this latter would have been a stupendous task if it meant that war was to be waged against all mosquitoes. Here, however, direct scientific observation proved to Ross that the only species of mosquito which could become infected belonged to a single group, the Anophelinæ." Thus the capacity to distinguish species from species became a necessity, as abundant errors in zoological publications conclusively prove, for the number of ill-described and unidentifiable species which cumber the pages of zoological journals is vast. The faculty for such observation is not universal and needs development by proper training; and though the training may properly form part of a post-graduate course, early zoological instruction will make it much easier.

Given the requisite zoological knowledge, the rest of the prophylactic measures are matters of common sense. It being known that the larvæ of germ-carrying mosquitoes inhabit such and such localities, it becomes clear that they must be eliminated from these localities. The emptying of water-butts, the screening of cisterns, and, in fact, the whole series of recommendations issued for the purposes of warning the ignorant are obvious results of the technical inquiries of the expert and need no special education on the part of those whose business it is to carry them out.

The history of discovery relative to yellow fever occupies no less than five chapters of the volume under consideration. It offers an excellent instance of the persistence of views without proper support, followed by the success of practical preventive measures deduced from the scientific study of other diseases. It is a most remarkable fact that in spite of great attention to this prevalent disease by so many competent observers of several nationalities there is up to the present no knowledge whatever of the actual parasite which is concerned in the disease. As Sir Rubert Boyce justly observes: "The prevention of yellow fever is one of the most brilliant triumphs of modern prophylaxis." So long ago as 1881, while this particular branch of preventive medicine was quite in its infancy, Dr. Finlay of Havana had enunciated a theory that mosquitoes were responsible for transmitting yellow fever. Although subsequent discovery did not lead to the detection of any microscopic parasite, it did undoubtedly establish the fact that the transmitter of the disease was a definite species of mosquito—viz., Stegomyia calopus—and that while the virus was transmissible by the fly it was only after a latent period of three days that this transmission could take place. This, of course, argues a development of the parasite within the fly analogous to what happens in the case of the malaria organism. This enormously important discovery could not have been made without a consideration of the previous work upon the transmission of malaria and upon the life-history of the malaria parasite. Previous though still recent methods of dealing with outbreaks of yellow fever were directed of course to the destruction of bacterial sources of infection. The fact that the disease, at any rate during a particular outbreak mentioned by the author, was found in the houses of the wealthy as well as in the more insalubrious quarters of Belize, may have given a clue to the inefficiency of that view of the causation. The failure of quarantine in coping with yellow fever depends, of course, upon the communicability of the disease being only *viâ* the stegomyia, a fact which must have come as a shock to many brought up upon older but still very new views. The truth of the statement of the alchemist and physician, Bombastes Paracelsus, that

disease comes from without and is not engendered within, is more than ever established.

It is perhaps remarkable that Sir Rubert Boyce only devotes a part of one chapter to sleeping sickness, in view of its bulking so largely in the public view at the present moment, as well as in view of the important theoretic question that it gives rise to. The Sleeping Sickness Committee housed by the Royal Society is extremely active in this matter and has been for some time. The numerous papers which have been sent home and are published, or to be published, in the Proceedings of the Royal Society by Sir David Bruce, now actively engaged in the investigation of the parasite of this disease, as well as the continuous work in this country of Mr. H. G. Plimmer and others, are resulting in a very detailed knowledge of the various trypanosomes which are the cause of this and some other allied diseases. While much is known of "trypanosomiasis" much is yet involved in mystery. It is not at all certain how far the trypanosomes actually live as parasites in the tsetse fly or whether, as already mentioned, they are merely conveyed from man to man or from beast to man in a mechanical way by the fly. Furthermore, the life-history of the protozoon requires clearing up. There is, for example, some evidence that it propagates itself at times by ultra-microscopical spores. Many years ago Dr. Dallinger, whose recent death we deplore, in coöperation with the late Dr. Drysdale, found that free living monads, allies of trypanosoma, divided into an immense number of excessively minute spores which could not be properly observed with the poorer lenses of the early "seventies." It is quite likely that the same phenomena occur in the parasitic forms which, moreover, may be conceivably parasitic stages of free living organisms, thus complicating the problem still further. Apart from prophylaxis Sir Rubert Boyce advocates arsenisation as the most effective treatment. In any case, as in other diseases conveyed by protozoon organisms, it is prophylaxis rather than treatment after infection that promises the best results.

This very interesting volume cannot fail to bring home to the reader the vast importance, economic as well as scientific, of this new "conquest of the tropical world." The text is elucidated by numerous plates from photographs which illustrate not only several of the insects concerned in the propagation of disease, but views of "anti-mosquito brigades," screened wards in hospitals, houses in course of fumigation, and many other scenes and objects bearing upon the contents of the book.

The Physiological Feeding of Infants. By ERIC PRITCHARD, M.D. Oxon., M.R.C.P. Lond., Assistant Physician to the Queen's Hospital for Children. Third edition. London: Henry Kimpton. 1909. Pp. 469. Price 7*s.* 6*d.* net.

THIS was a good book in its first edition; it is a much better book now. The first edition was written round the subject of the "modification" of milk, which was five years ago a comparatively new process, originally devised by Meigs in America. The chapters on the need of modified milk still remain, but much new matter has been added to them, and the volume has gained some important chapters on conditions of malnutrition in infants which reveal a wide experience and sound clinical judgment on the part of the author. The whole book is admirably written; it is polished in style, yet not formal; simple, and yet accurate. To an intelligent, educated mother or nurse the directions for the artificial modification of milk would be quite intelligible, and the methods could easily be followed from the directions. Much of the clinical description could also be comprehended by an intelligent laity, so that if not too much reliance were placed upon it alone the volume would be a useful manual in the nursery, though it is properly directed towards informing the medical profession. Especially valuable would be the sections on the modification of food in obedience to the hints afforded by symptoms of abnormal digestion.

We are glad to find the author opposing the indiscriminate use of predigested or peptonised milk. It has its value in acute gastro-intestinal derangements or for short periods of time, but it deprives the infant's stomach in health of the opportunity of learning to exercise its natural functions. It is impossible to insist too strongly on the value of fresh milk; the more milk is manipulated and handled the more it loses some subtle quality, partly due to the destruction of proteolytic and fat-splitting ferments. Dr. Pritchard places no faith in any form of dried or condensed milk. Our knowledge of the proteid constituents of milk is, however, far from complete, and the usual modern classification of caseinogen, lactalbumin, and lactoglobulin indicates only widely groups capable of being split up into numerous smaller varieties.

The practical details of milk modification deal with the alteration of the percentage ratio of fat (afforded by cream), milk sugar, proteids, and water. Modifications of the ordinary percentage of average cow's milk have been effected in a rough-and-ready fashion in nurseries since "bottles" were first used, but they have been much confined to additions of water, milk sugar, and occasionally cream. The teaching of Dr. Rotch and the practical working of the Walker Gordon laboratories have reduced the percentage reconstruction of milk almost to a certainty, but not quite. It is comparatively easy to separate cream and milk and reassemble them with any given percentages of fat and caseinogen, adding water, or cream, or milk sugar as required, but to prepare "split proteid" mixtures is a more subtle matter. It consists, in general terms, in preparing whey from separated milk by means of rennet, heating the whey to 140° F. to destroy the activity of the ferment, and adding cream and milk sugar. The factors involved in the reconstruction of milk, in which "split proteids" are concerned, are grouped for practical purposes as caseinogen, whey proteids, and fats, and the laboratories which undertake the "reconstruction" of milk are now prepared to issue milk re-formed in percentages of these constituents. Dr. Pritchard lays stress on the necessity of employing these "split proteids" in occasional cases of young or delicate infants, but the highly elaborate calculations and processes required by the employment of split proteids are seldom required and should not deter medical advisers from gaining a knowledge of simple methods. It is unnecessary to summarise the directions for the modification of milk, as it can be carried out in an ordinary nursery. The procedure is no more difficult than that involved in the construction of an ordinarily edible pudding, and the description of the processes as given by Dr. Pritchard is lucid, minute, and simple. He prefers a modification of Soxhlet's apparatus, which would cost about 15*s.*, but having a large experience among the poorest classes he is fertile in suggesting cheap substitutes for expensive apparatus. And not only in apparatus is he mindful of the empty pocket of the poor. There is no doubt that many infants among the poorer classes suffer from lack of cream in cows' milk diluted to furnish a lower proteid percentage. He therefore recommends the addition to each bottle of a small quantity of a solution of citrate of sodium to delay the coagulation of the caseinogen, and to supply the deficiency of fat he employs (for the poor) emulsions of cod-liver or salad oil, or even linseed oil. An emulsion of the

last can be made at a cost for materials which will furnish nearly a hundred feedings for 4*d*. It is impossible to note more than a small fraction of the many excellent points of detail in these chapters on milk; they are so careful and clear that everyone interested in or employed in the management of crèches or babies' homes should obtain this volume. There are admirable information and advice on the subject of breast-feeding, a function which is usually performed in a very perfunctory manner. Even accoucheurs and nurses of the widest experience might find something new to them in this chapter. The importance and methods for regulating the rate of sucking are properly insisted upon, and great stress is laid on the value of test-feeds estimated by weight. Very careful attention is also given to the recognition of the effects of the over-supply or under-supply of breast-milk.

Dr. Pritchard has compiled a mass of information based upon new work by Emil Fischer and other organic chemists on the digestion of the carbohydrates in the intestinal tract. As he says, our whole conception of this subject has recently been greatly modified and simplified. After reviewing the physiological chemistry of the carbohydrates which enter most largely into the constituents of food, the author traces very clearly the influence on babies of feeding them too early with carbohydrates, and arrives at the conclusion that "starch given at this early period of life is digested, but it is digested in the wrong way, in the wrong place, and by the wrong agencies." Instead, therefore, of being broken down by the amylopsin ferment in the duodenum, it is attacked by bacteria in the colon and broken down into irritating acids, such as acetic, butyric, and valerianic acids, and into gases such as hydrogen, methane, and carbon dioxide. We can conceive no better tribute to the author's style of writing than that he has rendered a disquisition on such a subject not only easily intelligible but extremely interesting to read. The end of the volume contains some excellent recipes for preparing foods for children which are careful and not too abstruse, while the ingredients can be obtained at moderate cost. Directions for making the emulsions to which we have alluded are given here.

Gall-stones, their Complications and Treatment. By A. W. MAYO ROBSON, D.Sc. Leeds, F.R.C.S. Eng., and P. J. CAMMIDGE, M.D. Lond. London: Henry Frowde and Hodder and Stoughton. 1909. Pp. 315. Price 5*s*. net.

THE works issued under the title of the Oxford Medical Publications have comprised several valuable additions to current medical literature. The volume before us may confidently be said to be at least as valuable as any of its predecessors. Time was when the treatment of gall-stones was purely medical; now the conditions are changed, and all agree that gall-stones should be treated early by the surgeon if the best results are to be obtained, and the parts of this volume which include the operative treatment of gall-stones are among the most valuable.

The chapter on the anatomy of the gall-bladder consists of an account of the structure of these parts, which, while it cannot be called elaborate, is adequate for the purpose for which it is intended. The authors divide the common bile-duct into four portions: (1) the supra-duodenal; (2) the retra-duodenal; (3) the pancreatic; and (4) the intra-parietal. The various forms which the ampulla of Vater may present are illustrated by a diagram, and this will help to demonstrate the differences that exist in different cases in the risk of a gall-stone lodging there in its course towards the duodenum. The authors appear to think that the linguiform processes of the liver or Riedel's lobe may be acquired. They mention that "it is said to be uniformly due to cholelithiasis," but they agree that it is not always associated with gall-stones. It is, however, extremely doubtful if it is ever really produced; it is probably always congenital.

An account of the character and composition of bile follows, and this is succeeded by a chapter on the composition and formation of gall-stones, and some excellent figures illustrate this occurrence. The bacterial origin of gall-stones is described, but we do not obtain any authoritative statement as to the relative frequency with which different organisms act as causative factors. It is suggested that a proteid diet in excess has but little tendency to the formation of gall-stones. The various symptoms of cholelithiasis are detailed and discussed. With regard to the law usually associated with Courvoisier's name, that distension of the gall-bladder accompanied by jaundice is usually dependent upon malignant disease, either of the head of the pancreas or of the common bile-duct, and is rarely associated with gall-stones, it is pointed out that one of the authors, Professor Mayo Robson, had drawn attention to this association previously to Courvoisier's publication, but it would be difficult at present to change the name of the law. As is pointed out here, the absence of dilatation of the gall-bladder which usually accompanies the presence of gall-stones is due partly to the ball-valve-like action of the stone not causing complete obstruction, and partly to the inflammatory changes set up by the calculi, by which the gall-bladder is frequently diminished in size as it becomes adherent to surrounding structures, so that when the common duct is later obstructed the gall-bladder is unable to dilate.

In the diagnosis of gall-stone the point on which most stress is laid is the paroxysmal nature of the attacks of pain, and the presence of very marked tenderness over the region of the gall-bladder, or at least over some point in a line from the ninth costal cartilage to the umbilicus. Slight jaundice is very frequently present in gall-stone colic, even when the calculi are merely in the gall-bladder or cystic duct. We agree thoroughly with the authors that in doubtful cases the operations of sounding for gall-stones and of aspirating a distended gall-bladder are not only futile but dangerous. A small exploratory incision is far safer and of much greater value whether for diagnosis or for treatment. The pancreatic reaction of the urine may sometimes prove very useful in doubtful cases. The complications of gall-stones are many, and the authors tabulate 27, though it would have simplified matters if they had been grouped; they range from dilatation of the stomach to infective endocarditis. The pathological changes in the gall-bladder and ducts are well described, and the authors maintain that drainage is the best treatment for suppurative cholangitis. As the authors point out, intestinal obstruction due to gall-stones may arise in four ways: firstly, there is simple mechanical occlusion caused by a large stone; secondly, obstruction due to volvulus dependent on the violence of the colic caused by gall-stone attacks; thirdly, obstruction resulting from adhesions left by local peritonitis; and lastly, obstruction dependent on paralysis of the intestine caused by peritoneal adhesions. Inasmuch as 52 per cent. of these cases are fatal when treated on medical and expectant lines, it is clear that surgery should be resorted to at an early period, and an operation should be performed as soon as symptoms of obstruction occur. We concur in the advice that enterotomy is far preferable and safer than any attempt to crush the stone without opening the bowel wall; and, of course, it is hardly necessary to point out that the mortality resulting in these cases when surgical intervention has been left to a late period of the disease cannot be taken as any indication that surgical treatment is as likely to be followed by fatal results as is medical treatment.

An interesting chapter is that on malignant disease. In a series of 56 operations for cancer of the biliary passages, 41

—that is, 73·2 per cent.—were associated with cholelithiasis, and even in several of the other 15 a history of long-continued attacks of intermittent pain pointed strongly to a similar association. The authors are inclined to support the theory that the "irritation" of the gall-stones leads to the occurrence of malignant disease. Calculi in the common bile-duct were said to occur by Courvoisier in 4 per cent. in all cases of cholelithiasis, but the authors have found this condition present in nearly 40 per cent. of their own cases of gall-stone.

A chapter is devoted to medical treatment, though it is pointed out that medical treatment is essentially preventive and not curative; but this preventive treatment should be of great value in diminishing the tendency to recurrence of stone in those who have already suffered from this affection. It is advised that the meals should be regular and at frequent intervals, and a mixed diet is, we are told, best; but over-indulgence in sweet or starchy foods should be avoided. It is especially urged that care should be taken that a sufficient amount of water should be drunk so that the bile may not run the risk of becoming concentrated. The authors do not believe that it is possible, by any drug administered by the mouth, to cause the absorption of stones already present in the biliary passages, but they think that some drugs, such as benzoate of soda, which have been reported as having a beneficial effect, may act by relieving the associated catarrh. They are quite sceptical as to the value of olive oil in causing the passage of gall-stones, and any effect it may have they ttribute partly to the lubricating action on the bile-duct and partly to the diminution of the excessive secretion of hydrochloric acid in the stomach.

As to the operations on the biliary passages, they urge the value of pushing the spine forward at the level of the liver and depressing the lower part of the body, so that the common and cystic ducts are brought several inches nearer the surface. As to the question which has within recent years been raised of the desirability of excising the gall-bladder in all cases where surgical intervention is desirable, the authors are opposed to it, for the results they claim of cholecystotomy are so good that they consider that it is unnecessary to remove the gall-bladder unless there is some special indication for it, while if the surgeon is not perfectly certain that the lower biliary passages are quite free the risks of cholecystectomy are very great.

This is a valuable book, for it contains in a convenient and readable form all the accepted knowledge on the subject.

Volksseuchen (*Epidemic Diseases*). 14 lectures. By various authors. Edited by Professor Dr. R. KUTNER. Jena: Gustav Fischer. 1909. Pp. 390. Price M.6.

THE series of lectures contained in this book are part of a course of what we should call post-graduate instruction, delivered under the direction of the Zentralkomitee für das aerztliche Fortbildungswesen in Preussen. An introductory address by Professor M. Kirchner deals with epidemics in general and emphasises the amount of human life which they are responsible for destroying. In the second lecture Professor A. Wassermann gives a brief outline of our present knowledge of immunity and of the principles of serum-therapeutics founded upon it. Later in the book this same writer deals with enteric fever, chiefly from the bacteriological point of view, describing the methods of identifying the bacilli, the Widal test, and the unsuccessful attempts so far made to treat the malady by specific methods; and in the last lecture but one he also writes on small-pox and vaccination. While in respect to this last disease Germany is specially well protected by reason of a scientific insistence upon universal vaccination, in regard to other epidemics, such as dysentery, plague, cholera, leprosy, and hydrophobia, the land frontiers of the country render it more exposed than are these islands to recurring outbreaks. The fear of the introduction of plague seems from these lectures to be ever present, and two lectures are devoted to this subject, one by Professor W. Kolle on the clinical features of this protean affection, and a second by Professor G. Sticker on diagnosis. The former is specially interesting as giving a graphic account of the malady, which is very well worthy of study. Dysentery is dealt with by Professor Kruse and cholera by Professor W. Kolle. Two lectures deal with tuberculosis, one by Professor W. Dönitz on the treatment of the affection, and the other by Professor A. Moeller on the public health and sanatorium aspects of the question. The former writer regrets that there is no method of measuring the degree of immunity produced by injections of tuberculin, and makes no mention of the determination of the opsonic index, which strikes us as an extraordinary omission. Opinion may differ as to what the value may ultimately prove to be of some of the work done in this direction, but this point makes that work more certainly deserving of record and criticism. We find sometimes that appreciation of the work of foreign observers is not a strong point in German science. Yellow fever, sleeping sickness, and beri-beri are described in one lecture by Dr. B. Nocht, and malaria in another by Professor E. Martini. The latter gives some useful illustrations of the anopheles and culex genera of mosquitoes and of their larvæ. Professor M. Kirchner's lecture on leprosy is interesting, as giving an account of the development of humane treatment of this disease, and also as pointing out its wide prevalence even at the present day, when our own immunity from it leads to a disposition to minimise its importance elsewhere. The final lecture by Dr. Schüder on hydrophobia may be studied with advantage as affording a good account of the measures taken in Germany to deal with outbreaks of the disease, although the immunity which has been obtained in this country renders any imitation of them here unnecessary.

In the above account we have not kept to the order of the actual chapters. It will be seen that the volume does not contain a complete account of all infective diseases, but a series of articles on certain selected examples. These are from the hands of experts, and are clearly written and of definite value. We understand from an editorial note that other volumes in this series are to follow, and we shall look forward with interest to their appearance in view of the excellence of the present book.

The Ophthalmic Year-Book. Edited by EDWARD JACKSON, A.M., M.D., GEORGE E. DE SCHWEINITZ, A.M., M.D., and THEODORE B. SCHNEIDEMAN, A.M., M.D. Volume VI. Denver, Colorado: The Herrick Book and Stationery Company. 1909. Pp. 415.

THE "Ophthalmic Year Book" is an American publication containing a digest of the literature of ophthalmology of the year. It has now reached its sixth volume, and each succeeding volume has been an improvement on its predecessor. It is published under the editorship of Dr. Jackson, Dr. de Schweinitz, and Dr. Schneideman, names which are guarantees for the excellency of the publication. In fulness and detail it scarcely competes with Nagel and von Michel's "Jahresbericht für Ophthalmologie," but it has the inestimable advantage of appearing within a few weeks of the end of the year which is being dealt with. Its utility is enormously enhanced by this fact, and, as far as we have been able to judge, it gives a remarkably complete and accurate *résumé* of ophthalmological literature. The book is divided into three sections. The first gives short biographical sketches of ophthalmologists who have died

during the year; the second, comprising the bulk of the book, gives a classified digest of the literature; and the third gives the list of the books, transactions, and journal articles, with extensive references to the places of publication. It will suffice to say that the abstracts from the papers and other publications have been satisfactorily carried out, not only with regard to American literature, which naturally occupies a prominent place, but also with regard to English, German, and French. We consider it a book which no ophthalmologist can afford to be without.

LIBRARY TABLE.

First Principles of Chemical Theory. By C. H. MATHEWSON, Ph.D., Instructor in Chemistry and Metallography at the Sheffield Scientific School of Yale University. London: Chapman and Hall, Limited; New York: John Wiley and Sons. Pp. 123. Price 4*s.* 6*d.* net.—This book is quite advanced in the treatment of its subject, in spite of which it presents the first principles of modern chemical theory in plain and intelligible terms to the beginner. The author however, very properly does not expect the reader to confine himself to theoretical considerations, for he distinctly states that the purpose of the book is rather to offer a very early presentation of leading principles which are of material assistance in teaching the beginner to explain and correlate his experimental results. In the plan of teaching adopted at the Sheffield Scientific School of Yale University the aim is to improve every opportunity for illustrating and applying the principles discussed as the student adds to his actual chemical experience. That is an admirable plan. The author justifies the introduction of the electrolytic dissociation theory and the law of mass action at an early stage, and, in fact, includes such considerations in the first year of study. We agree with him that, having regard to the importance of these questions in all chemical studies, they should receive attention as soon as possible, and if the student's practical course is directed to a demonstration of chemical changes and the theoretical considerations which they involve he is calculated early to realise the meaning and significance of ions and so forth. The modern interpretation of chemical change and reactions is thus well put, and the book should be not only of distinct service to students, but to others who, while they have studied chemistry under the old *régime*, would be glad to keep pace with recent developments.

Guy's Hospital Nursing Guide, 1909. Edited by the MATRON. London: Ash and Co. Pp. 166. Price 1*s.* 6*d.*—This is the fifth issue of the register of nurses of Guy's Hospital. To it is appended an excellent essay on Nursing as a Profession, and 40 pages of valuable information on various points connected with a nurse's duties, such as the handling of infectious cases, the immediate treatment of poisoning, and other subjects, all well arranged and sound in matter. There are some very good receipts for invalid cookery. Those contemplating nursing as a career would find this unassuming volume a valuable guide.

Transactions of the American Otological Society. Forty-second Annual Meeting. New Bedford, Massachusetts: Mercury Publishing Co. 1909.—The first paper in this volume of transactions has been contributed by Dr. Crackett. It deals with the treatment of acute suppurative lepto-meningitis of otitic origin, and is based upon six cases operated on by drainage. The second paper is by Dr. Norval H. Pierce and is a report of a case of recovery after an operation on a large cerebellar abscess, in which the patient exhibited nystagmus towards the sound side with the caloric test on the sound side, and on the diseased side a negative result was obtained. Dr. Dench reports two cases of abscess of the brain, one of them terminating in recovery. A paper read by Dr. P. Fridenberg on some recent theories of the labyrinth will well repay careful perusal. An article on subjective and objective sense of sound perception by Dr. D. B. Kyle is a well prepared paper. Dr. J. B. Ras reports two cases of Sinus Thrombosis. Dr. A. B. Duel and Dr. J. Wright contribute a paper on the Clinical and Pathological Significance of Bacteriæmia in Suppurative Otitis; it contains a large amount of exceptionally interesting matter. Dr. G. E. Shambaugh read a paper on the Significance of Certain Labyrinthine Symptoms. Dr. W. C. Braislin presented: (1) a paper on a Study of Some Casts of the Infantile Pharynx, with special reference to the Eustachian Tubes; and (2) a Note on Eustachian Obstruction, together with a long bibliography. The remaining memoirs which complete the volume are as follows: Autotoxic Deafness, by Dr. S. F. Snow; Nasal and Aural Discharge in Children, by Dr. P. Fridenberg; Sequestrum of Labyrinth, by Dr. J. F. McKernon; the Importance of the Thorough Study of the Naso-pharynx in the Treatment of Diseases of the Ear, by Dr. J. R. Packard; Chronic Epipharyngeal Periadenitis in Adults, by Dr. J. S. Logan; Report of a Case of Removal of Foreign Body from the Region of the Tympanic Cavity, Entrance through Soft Palate, by Dr. D. A. Walker; and Radical Removal of the Tonsil, by Dr. C. W. Richardson.

Annals of Otology, Rhinology, and Laryngology. St. Louis, Missouri: J. H. Parker. June, 1909. Price $4·00.—This volume contains papers read at various meetings of societies in the United States, the first being by Professor Chiari on the Treatment of Cancer of the Larynx; and the next, admirably illustrated by Dr. Loeb, is a Study of the Anatomical Relations of the Optic Nerve to the Accessory Cavities of the Nose. These are followed by several other good papers. The first original one is by Dr. L. M. Hurd and Dr. J. Wright upon the Diagnosis of Tuberculosis of the Tonsils, Clinical and Microscopical; the next being on the Removal of the Entire Tonsil by F. C. Todd. A Method of Precision for Inflating the Tube and Tympanum is the title of a short paper by Dr. J. Hubbard; and Dr. D. Day reports a case of probable sarcoma of the temporal bone. A few abstracts on current literature are also included.

Christmas and New Year Cards, &c.—From Messrs. Raphael Tuck and Sons, Limited, Moorfields, London, E.C., we have again received a selection of Christmas and New Year greeting cards, pictorial calendars, and toy books for children, of infinite variety, artistic design, and excellent workmanship. We have for so many years past spoken in terms of high commendation of the productions of Messrs Tuck, that it is difficult to find new words with which to express our approval.

JOURNALS AND MAGAZINES.

The Manchester Medical Review.—Two articles on the relations of the medical profession and the public appear in the October issue of this magazine. One by Dr. J. Stavely Dick deals with the organisation of the profession from within and acclaims the British Medical Association as "a type of machine for such a purpose which cannot be surpassed." The other, written by Dr. E. Vipont Brown, draws attention to the evils of dispensaries and sick clubs, and regards the scheme propounded by the Minority of the Poor-law Commission as affording a suitable remedy. Dr. G. H. Lancashire contributes an interesting paper on Dermatitis Artifacta, and Dr. S. English deals with the subject of Strangulated Hernia and records three illustrative cases.

Journal of Laryngology, Rhinology, and Otology. August, September, October, and November, 1909.—The August number of this journal contains a paper on Congenital Syphilis of the Ear, by Dr. J. S. Fraser, being Part 2 of the

report for the Ear and Throat Department at the Royal Infirmary, Edinburgh. In the September number there is a paper by the same author on the Histology of Nasal Accessory Sinus Suppuration. Otherwise the issues consist mainly of transactions of societies, with a few abstracts from current literature.

New Inventions.

A NEW ÆSTHESIOMETER.

THE instrument which I here describe is by no means presumed to be indispensable, but it is capable of filling a want in the armamentarium of the neurologist, who often has to make a series of examinations of sensibility in a relatively short time. The utensils required occupy only a small space; the case may be easily carried in the coat pocket. One can work quickly with it and yet get very exact results. I consider it a special advantage to be able to trace immediately the limits of sensation and to have one hand free during the determination of the sensibility to contact, pressure, and pain, although both hands are in use in the delineation of the limits of sensibility to temperature. The case contains two instruments:—

1. One of these is slender, shaped like a penholder, and covered at both ends with caps which are removeable by simply pulling them off. A camel's hair pencil may be placed on the end of one of these caps; it is used for testing tactile sensation. Removing the cap reveals a needle; this serves to test the sensibility to pain. This needle may be heated to redness before each examination without blunting its point in the least. The other cap encloses a dermatograph. Between the latter and the needle lies a spring, the strength of which may be graduated in three different degrees by means of weights. As a rule this spring is tight. Its simple tightening mechanism is loosened by a slight turn to the left; this enables us to test the sense of pressure by placing on the skin either the dermatograph or the cap which covers the needle, then compressing the spring. When for this purpose the needle is used it is easy to graduate the irritation of pain by compressing the spring, just as with Aly's instrument. With this part of the æsthesiometer we may also test the tactile sensibility, as well as that of pain and pressure, while simultaneously tracing the obtained limits.

2. The other instrument is broader and serves to examine the sense of temperature. It consists of three parts: two hollow metallic cylinders, separated by a solid rubber cylinder, which serves both as handle and isolater. The metallic cylinder which lies nearer the corrugation in the rubber handle is filled with sodium acetate, like a thermophore. This salt, as is well known, melts on being heated a short time over the flame of a spirit lamp or any other, communicating the disengaging heat to the surrounding parts; it recrystallises on cooling. It may therefore be used a considerable number of times without renewing. With this part of the instrument we test the sensitiveness to heat. The other cylinder serves to test the sensation of cold; for this purpose the natural coldness of the metal alone may be used (which generally suffices in winter), or the cylinder may be filled either with cold water or with lumps of ice. Experiments made in the Frankfort Physical Society by a chemist, Dr. W. Epstein, and myself have shown that for tests with high degrees of cold—which seldom come into consideration, since intense cold, just as excessive heat, acts more like an irritation of pain—ammonium nitrate is the most suitable material. It is cheap, may be had in large crystals, and easily introduced into the cylinder. It is only necessary to add a little water and the nitrate dissolves immediately, giving out intense cold. But it does not recrystallise spontaneously; a new filling is therefore required before each examination.

Experiments have determined that the differences in temperature may be plainly recognised by healthy persons during about 15 minutes, even when the cylinder is only filled with cold water; this time is amply sufficient, even for very minute tests of the sense of temperature. Both metallic cylinders are closed by screwing the caps on tight; thus the cold and the warm side may be applied alternately and continually without danger of leakage. It is obvious that this method of examination is much easier than the one generally used with several test-tubes of different temperature, not to mention the greater facility in the transportation of our instrument and the advantage of being able to trace with the dermatograph the limits obtained.

This instrument may be obtained from Mr. B. B. Cassel, Neue Zeil, Frankfort-on-the-Main, price M.15, case included.

Frankfort-on-the-Main. DR. SIEGMUND AUERBACH.

MEDICINE AND THE LAW.

A Foolish Libel on a Medical Inspector of Schools.

Dr. Martha Adams, a lady who in July, 1908, was appointed medical inspector of schools in the district of Twickenham, recently brought an action for libel against *Vanity Fair*, Limited, Pomeroy, and others, in respect of an article written by the defendant Pomeroy, and published over his signature in *Vanity Fair*. The action when the case came on for trial had been stayed against all the defendants except Mr. Ernest Pomeroy. The evidence showed that acting in her official capacity the plaintiff found two girls in a school under her care had not been vaccinated, in the case of one of whom a certificate of exemption did not appear to have been obtained. The plaintiff thereupon gave notice of this to the vaccination officer, a course which was not prescribed by the circular of the Board of Education defining her duties, and with regard to which a question in the House of Commons elicited the reply from the President of the Board that information so obtained should be regarded as strictly confidential. The defendant wrote of this incident in *Vanity Fair*, "To my mind a more villainous misuse and abuse of power has never been perpetrated even in the medical profession, which is peculiarly prolific in devices of this kind. But why are the medicoes so prejudiced? Because of the vaccination fees! How many of the children reported to the vaccination officer by Dr. Martha were subsequently infected by her, and at how much per head, or, if by some other doctor, what percentage of fees did she obtain?" Apparently the fact that the plaintiff had exceeded the strict limits of her official duties in what she did affected the view of the jury. At all events, they were content to find a verdict for one farthing damages, for which judgment was entered with costs. An appeal published in another column (see p. 1854) should ensure Dr. Adams's personal loss being amply covered. It need hardly be mentioned that Dr. Adams, in the witness-box, stated that she had never vaccinated a child in Twickenham, or suggested that one should be vaccinated, and that her remuneration was by salary unaugmented by fees for examining or reporting on children and that no contradiction of this was attempted.

Typhoid Fever from Eating Oysters.

An action was recently tried before the Lord Chief Justice and a special jury in which the plaintiff, Leslie Cardale, a lieutenant in the Royal Navy, sued Henry Klockenbusch, a hotel keeper at Chatham, for negligence in supplying him with oysters at dinner from which he contracted typhoid fever. A brother officer, like himself in command of a torpedo-boat destroyer lying off Sheerness, who dined with the plaintiff on the night when the oysters were alleged to have been eaten, had also been taken ill with typhoid fever and had died. The plaintiff was the only witness as to the fact of his having eaten oysters at the defendant's inn on the night alleged, his companion being dead, and the fact that he had eaten them being denied by the defendant whose books did not show that any oysters had been supplied to customers on the day named. Ample medical evidence was, however, given as to the illness of the plaintiff, as to the dates on which both officers were first medically attended, as to the normal period of incubation of

the disease, as to the absence of other cases in the fleet, as to the nature of the contamination of oysters, and as to its effects. The medical officer of health of Chatham also deposed to the fact that certain areas in the Medway were liable to be infected by sewage from Rochester and Chatham, and that oyster beds had been closed by order of the Fisheries Commission. The chamberlain of the Rochester fisheries was also a witness with regard to the contamination of certain beds which he specified, in the neighbourhood of Chatham and the steps taken to prevent dredging from them. It was contended on the part of the defendant that he had taken all reasonable care and that it was not proved that the illness of the plaintiff was due to his having eaten oysters on the date alleged at the defendant's house. The questions left by the Lord Chief Justice to the jury were as follows: "Did the plaintiff contract typhoid fever from any oysters supplied by the defendant? Did the plaintiff rely on the skill and judgment of the defendant to supply him with fit and proper food? Assuming that the oysters were supplied by the defendant to the plaintiff, was the defendant, or were his servants, guilty of negligence?" The above questions, upon which the liability of the defendant was held to depend, were all answered in the affirmative by the jury, and as this constituted a finding for the plaintiff, a verdict as to the damages was added—namely, £264, to include £100 in addition to the "special damages" claimed. The latter were made up of expenses of medical treatment and of loss of pay due to the illness. Judgment was given for the above amount, a stay of execution being granted subject to the money being paid into court.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

AN ordinary meeting of the Council was held on Dec. 9th, Mr. BUTLIN, the President, being in the chair.

A report was read from the Board of Examiners in Anatomy and Physiology for the Fellowship, stating that at the recent examination 108 candidates were examined and that 33 of these were approved and 75 rejected. It was resolved to issue Diplomas of Fellowship to 28 successful candidates. It was resolved to issue diplomas of the Licence in Dental Surgery to 36 successful candidates.

Certain alterations in the regulations for admission to the museum, recommended by the Museum Committee, were approved and adopted. The most important change is that women holding other medical or surgical qualifications than those of the College, and women medical students desirous of admission to the museum on other days than Friday or Saturday, must make application in writing to the secretary or conservator. The application must be accompanied by a letter from the dean of the applicant's medical school in the case of a medical student, recommending that a ticket of admission be granted. Tickets of admission, which are not transferable and must be produced on application before admission, are granted for six months; at the expiration of this time application must be made for their renewal.

Mr. J. F. Colyer was appointed honorary curator of the odontological collection.

On the recommendation of the Committee of Management it was resolved to add the London School of Medicine for Women and the Edinburgh School of Medicine for Women to the list of recognised medical schools, and to add the Royal Free Hospital to the list of recognised hospitals; it was also resolved to recognise the public health laboratories of the School of Medicine of the Royal Colleges of Physicians and Surgeons of Edinburgh for the course of instruction for the diploma in public health. These recommendations require also the approval of the Royal College of Physicians of London.

It was resolved to address a communication to the Privy Council urging the need for early legislation to give effect to the recommendations of the Departmental Committee appointed to consider the working of the Midwives Act of 1902.

Mr. H. F. Waterhouse was elected a member of the Court of Examiners in the vacancy occasioned by the retirement of Mr. Bernard Pitts. Dr. G. F. Blacker was elected an examiner in midwifery under the Conjoint Examining Board in the vacancy occasioned by the death of Dr. W. R. Pollock. Mr. R. J. Godlee was appointed a representative of the College on the Senate of the University of London in the place of the late Mr. H. H. Clutton. Mr. A. Pearce Gould was elected a member of the Executive Committee of the Imperial Cancer Research Fund in the vacancy occasioned by the death of Mr. Clutton.

The best thanks of the Council were given to Mr. Bernard Pitts for presenting to the College an instrument cabinet made and used by the late Sir William Fergusson, Bart.

A letter was read from the Medico-Psychological Association of Great Britain expressing its sense of "the urgent necessity of post-graduate teaching in psychiatry in medical schools and for the granting of a special diploma to candidates after examination," and asking the Universities and other examining bodies to take these matters into consideration. The letter was referred to the Committee of Management for consideration and report.

A letter was read from Sir Henry Morris, Bart., reporting the proceedings of the General Medical Council at its late session. The best thanks of the Council were given to Sir Henry Morris for his services as the representative of the College on the General Medical Council.

THE JOHN HERBERT WELLS FUND.

THE following is the sixth list of subscriptions to the John Herbert Wells Fund. Further contributions will be gratefully received by the Earl of Dalhousie and Mr. Julian G. Lousada, honorary secretaries and treasurers of the fund, at 16, Old Broad-street, E.C., or by ourselves at this office:—

	£	s.	d.
Sir Edgar Speyer, Bart.	25	0	0
Sir Jesse Boot	10	10	0
Colonel Hon. W. Le Poer Trench, R.E.	10	10	0
Mr. C. E. Leo Lyle... ...	10	0	0
Mr. Henry Rutson ...	10	0	0
Mr. Charles W. Wood ...	10	0	0
Mr. Leslie Paton, F.R.C.S....	5	5	0
Right Hon. Marquess of Lansdowne	5	0	0
Mr. Cyril Cunard	5	0	0
Mr. Albert Brassey... ...	5	0	0
Per Miss Bairdsmith ...	5	0	0
Dr. R. Haynes Lovell ...	3	3	0
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Mr. B F. Smith	1	1	0
Mrs. Forsyth	1	1	0
Mr. E. Heron	1	0	0
Anonymous (Charing Cross)	1	0	0

UNIVERSITY OF DURHAM.—A Convocation was held in the Castle Hall, Durham, on Dec. 7th. The Chancellor (Dean Kitchin) presided, and there was a large attendance of members of Convocation. Numerous ordinary degrees in arts, science, and letters were conferred, while an honorary D.C.L. was given to Mr. James Bell Simpson in recognition of his efforts on behalf of scientific education in the north during the past 40 years. The Convocation was largely interesting in that it was the first held under the statutes of the new Durham University Act of 1908. The Chancellor asked that he might be allowed to say a few words on this special occasion. He could look back on the history of the University since 1834, the date of his earliest recollection of the city and University of Durham. He briefly sketched the history of the outlying colleges, of science and medicine, which came to be a part of the University in the early "seventies." He spoke further of the desirability of keeping up the standards of entrance and other examinations, and foretold a bright future for this centre of education in the north. Principal Jevons (Hatfield Hall) also made some appropriate remarks, and mentioned the coincidence that the first birthday of their new University was the eighty-second birthday of the Chancellor. Following this was the election of members of the new Senate, the result being:—For the Durham Division: Dr. Gee (Master of University College), Principal Moulsdale, H. E. Ferens, and W. R. H. Gray. College of Medicine (Newcastle): H. B. Angus and R. A. Bolam. Armstrong College (Newcastle): T. H. Havelock and J. A. Smythe. The Council of Durham Colleges: H. E. Ferens, W. R. H. Gray, and Rev. J. P. Day.

THE LANCET.

LONDON: SATURDAY, DECEMBER 18, 1909.

The Medical Curriculum of Edinburgh University.

ON another page we print a summary of the report on the medical curriculum at the University of Edinburgh, the work of a committee appointed by the Edinburgh Pathological Club to inquire into the question of the present curriculum and the general efficiency of the school. The summary may well be read in connexion with the series of articles which we are now publishing on medical education, to which it forms an interesting supplement. The committee spent many months over the inquiry, and several evenings were devoted to the discussion and final adjustment of the committee's report by the club itself. The report has thus a somewhat unique value as emanating from a body which represents in its active membership most of the younger workers in the Edinburgh school, and with which the more senior workers retain their connexion even though they do not attend the ordinary meetings. The question of medical education has of late been much discussed largely owing to the establishment of new universities in important English centres with a freedom of action unknown to Edinburgh and the other Scottish universities. These young rivals, not new as schools but new as degree-granting centres, have had practically a free hand to organise their medical teaching on the most modern lines, while their endowments have enabled them to make the standard of medical education as high as was deemed to be desirable. In the case of Edinburgh and the other Scottish schools the methods of imparting instruction are based on foundations going deep into the past, however much the instruction imparted may represent the best and the newest knowledge. Edinburgh has, moreover, in its extra-mural school an institution which is unique, for nowhere else, even in Scotland, has extra-mural teaching the status, prominence, and power which it has long held in the capital. The extra-mural school has often been the first party to adopt new plans and new methods; while the University necessarily represents the conservative party, although in either camp men of extreme views may be found.

Not only do time-honoured methods of instruction tend to persist, but some of the more scientific subjects of the curriculum, in which great advances have been made, have a place given to them by their professors which is out of proportion to the time needed for the final subjects, and this must be recognised as an inevitable result of a traditional method of administration to which the modern appellation of "watertight compartments" is applicable. So much has to be said in explanation of the position in which Edinburgh at present stands and of the criticism which the report with which we are dealing passes upon the school, as represented by the University. The one question which both parties have at heart is, How are students to be trained so as to fit them for the practice of healing in the community? For men who aspire to a university degree in medicine there can be no question that they should have an appreciative acquaintance with the earlier scientific subjects of the curriculum. Seeing that it is impossible to acquire a full knowledge of any of these subjects in the time available, it is in the highest degree important that attention should be concentrated on the aspects of the various subjects which are necessary for the intelligent and accurate understanding of clinical phenomena, while the practical work should be of a kind that will be an aid to the investigation of the conditions with which clinical medicine deals. We have on many occasions expressed our agreement with the principles suggested in the report of the coördination of the earlier medical studies and their teaching with a direct view to their future application. This is especially the case with chemistry, physics, and physiology. The teaching of anatomy should be so directed as to familiarise the student with the relations of the internal organs in such a way that he may appreciate the significance of physical signs and symptoms when they are brought to his notice by his clinical teachers. This correlation of subjects can only be attained by a free and frank coöperation between teachers who keep before their minds that the main aim in their work is the fitting of the student for his life's work as a well-educated practitioner.

With regard to the final subjects of the curriculum the report takes the view strongly that there can be no efficient teaching of clinical medicine or surgery save to comparatively small classes, indicating that the opposite condition rules in Edinburgh. This is evidently the explanation of the suggestion that the four ordinary physicians to the infirmary should have the status of University lecturers or professors, with a common fee fund, and with the students equally distributed between them and the three University clinical professors. A working scheme on these lines seems to us easy of adjustment if the University will adopt a forward policy, and we trust she will do so. It is not to the true interest of medical teaching anywhere that a great teaching school like Edinburgh with its high traditions should drop out of the front rank from want of elasticity or from failure to adapt itself to new conditions and new requirements. We do not think that the most critical would formulate such an accusation exactly, but medical education is passing through an anxious stage, rivalries are many, and even the most honoured institutions are finding that they cannot progress on prestige.

The Structure of Isolation Hospitals and Sanatoriums.

ALTHOUGH experience of the value of both fever hospitals and sanatoriums for pulmonary tuberculosis has brought them down to a materially lower level as preventive and curative agencies than they occupied in the eyes of those who first advocated their establishment, the fact remains that both institutions are of very great utility and are certain to be provided, wherever the funds are to come from, in an increasing degree in the future. Neither alone will "stamp

out," as it is called, any of the diseases for which they are intended, but each will continue to serve a highly useful purpose and, employed in conjunction with many other measures and agencies, should have the effect in the case of isolation hospitals of limiting the spread of infectious diseases and enabling the members of invaded houses to return to work or to school, and, in the case of sanatoriums, of helping many with a tuberculous lung in its early stages on to the high road which leads to recovery, as well as teaching the patients how to prolong their lives hereafter and to be of minimum danger to their fellows. But in addition to these very solid arguments is the fact that the public, having once tasted the convenience and comfort of these institutions, will continue to demand their provision, and he would be a brave man who, because neither institution has quite come up to expectation, urged that existing structures should be done away with and no more erected. But it cannot, however, be denied that much more money has in the past been expended upon some of these hospitals and sanatoriums than need have been the case, and, this being so, such excess expenditure must be regarded in one way as wasteful in that it might have been devoted to some other branches of preventive medicine which might have been of greater value.

This excessive cost of fever hospitals has been brought about partly by the architects and partly by medical men, and it has been due in no small degree to the circumstance that the use of what are known as permanent—i.e., brick or stone—edifices has been regarded in the past as essential. But the improvements made in what are called "temporary" structures during recent years, and the durability and comfort of such buildings, are raising questions in the minds of many thoughtful administrators as to whether these temporary edifices, if thoroughly well constructed, may not, at least in many instances, serve quite as useful a purpose as the more costly permanent edifices. With reference to the provision for the infectious fevers Dr. J. C. MCVAIL contributes to a recent issue of *The Medical Officer*[1] an instructive paper upon the cost and value of wood and iron isolation hospitals. Dr. MCVAIL circularised the county medical officers of Scotland on the subject, asking their experience and conclusions as regards the durability, cost, efficiency, and comfort of these buildings, and as to their suitability for phthisis and small-pox. It was found that there was considerable discrepancy of opinion as to the value of these "temporary" buildings, although practically all the replies were in favour of their suitability for the purpose of patients suffering from pulmonary tuberculosis, and it is of importance to have elicited unanimity even on this point. Some medical officers of health regard the trouble as to the repair of these temporary edifices as a distinct drawback to them, while others have found it difficult to maintain an equable temperature in them, but as to this latter point it must be remembered that the hospitals referred to were situated in rather colder climates than are generally experienced in England. But, on the whole, the county medical officers of Scotland have more to say in favour of these buildings than was, perhaps, to have been expected. Dr. MCVAIL himself draws attention to a very important point in the construction of these temporary buildings, and that is the need for the use of thoroughly seasoned wood. There is no doubt that many of the obvious drawbacks to these buildings are due in large part to defective construction, and if this be guarded against they are likely to serve very useful purposes for the acute infectious diseases. Unfortunately, some rather serious catastrophes have befallen some of these badly constructed "temporary" buildings, and there are several instances on record in which structures of this description have been completely wrecked during a high storm of wind, the patients having been carried out in blankets and placed under a hedge or otherwise disposed of. But the fact remains that there are many of these temporary buildings in different parts of England which are serving with satisfaction considerable populations, who but for these buildings would be without any isolation accommodation whatever. It has also to be remembered that not improbably in the near future the open-air method of treatment will be adopted in growing measure in connexion with isolation hospitals, and already at Nottingham Dr. PHILIP BOOBBYER is treating cases of enteric fever and certain other diseases in this fashion. It is clear that if this practice becomes general the need for extensive isolation blocks of stone or brick ceases to exist.

As to sanatoriums for consumption, an inspection of the illustrations contained in Dr. H. T. BULSTRODE'S report to the Local Government Board upon these institutions will suffice to show that already a considerable proportion of the public institutions in this country are composed of materials to which the term "temporary" would be used, and there appears to be no evidence whatever to lead to the conclusion that the patients treated in the temporary structures fare less favourably than those housed in expensive palaces upon which several hundred pounds per bed have been expended; in fact, it is believed by many who have had experience of sanatoriums that those patients who are almost entirely in the open air fare better than those in the wards, and Dr. F. W. BURTON-FANNING at his sanatorium at Kelling has, we believe, found that patients whose temperature while kept in the wards was persistently elevated have had a normal temperature after a short rest in an open shelter. In all these circumstances it seems regrettable that the high cost of many modern sanatoriums is allowed to stand in the way of the provision of cheaper structures by leading the public to believe that the tuberculous sick can only be provided for in buildings which must cost at least £400 to £500 per bed. We are afraid that this belief has something to do with the small number of institutions erected recently.

[1] The Medical Officer, Oct. 6th, 1909.

Cholera in Europe in 1909.

IT is a somewhat remarkable circumstance that the public mind in this country seems so little disturbed nowadays by the appearance of cholera in Europe, and that even the landing of an occasional shipborne case at one of our ports gives rise to no alarm. Our readers are doubtless aware that it was not ever thus, and that in days not so long distant the British ratepayer had as much reason for anxiety as many of his continental contemporaries. Indeed, our forefathers would have read with fear and anxiety even such a

communication as we publish this week from the British Delegate on the Constantinople Board of Health, giving an account of the spread of cholera in Europe in 1909. It appears from this report that cholera has been epidemic in European Russia during each of the last three years, and that the outbreak in 1909 was of considerable dimensions. From Russia cholera was conveyed by rail across the German frontier into East Prussia, as also down the River Memel into the same province. Owing to the excellent measures in force in Germany the disease in no case spread after i had been detected. From St. Petersburg and from certain Baltic ports cholera was carried on board ships to various European countries; but, as in Germany, the measures applied at Swedish, Norwegian, Danish, and English ports prevented any spread from the imported cases. In Holland, however, a sharp outbreak of cholera occurred at Rotterdam in the autumn, the infection having been carried there from Russia on shipboard; scattered cases owing their origin to Rotterdam were also observed along some of the Dutch waterways; and just across the Belgium frontier two groups of cases were also notified. This is practically all the cholera that occurred in Europe during 1909. With the exception of Russia, which is notoriously lagging behind in sanitary matters, particularly in neglecting protection of its water-supplies, none of the other European nations found much difficulty in dealing with imported cholera. It is well to bear in mind that the methods now employed by the most enlightened nations are those for which England has striven for many years and which she has endeavoured to induce successive international congresses to accept. For a long time the other Powers rejected these methods as being inadequate, and it was contended that only a seagirt land like Britain could run the risk of employing them. With the advance of knowledge and accumulation of experience continental opinion has come round to England's way of dealing with cholera.

This method imposes no restrictions upon intercourse between one community and another—town and town, nation and nation. England is content with providing for the care of persons actually sick and with obtaining the destruction of whatever may be harmful in the discharges from the cholera cases; and for the rest each community (under European conditions) can, if it pleases, render cholera harmless for itself by the adoption of practices which are profitable against other diseases as well as cholera. In land and sea traffic England has advocated the dispensing with those detentions known as quarantines, for they have been found in practice "to result rather in hazardous concealments and evasions than in any effectual exclusion of cholera." Thus it will be seen that England has depended in the first instance on general sanitary improvements as the basis of cholera prevention, and specially the safeguarding of public water-supplies. Further, to our port sanitary authorities has been entrusted the important duty of arresting actual or suspected cases of cholera on their arrival from infected countries. How well the officers of these port authorities have done their duty the records of this country in late years will testify. Placing implicit confidence in the authorities, the ratepayer, though he grumbles sometimes at the cost, sleeps in his bed in peace, notwithstanding that cholera may be spreading on the continent. This system has not been evolved without a great struggle. A little over 50 years ago CHARLES KINGSLEY raised his powerful voice in protest against the apathy of the British Parliament respecting sanitary reform when cholera was knocking at the gate. We may be pardoned if we give here a quotation from an article published in 1858 in *Frazer's Magazine* by him: "The cholera, as was to be expected, has reappeared in England again; and England, as was to be expected, has taken no sufficient steps towards meeting it; so that if, as seems too probable, the disease should spread next summer, we may count with tolerable certainty upon a loss of some 10,000 lives. That 10,000 or 1000 innocent people should die, of whom most, if not all, might be saved alive, would seem at first sight a matter serious enough for the attention of 'philanthropists.' Those who abhor the practice of hanging one man would, one fancies, abhor equally that of poisoning many; and would protest as earnestly against the painful capital punishment of diarrhœa as against the painless one of hempen rope. Those who demand mercy for the Sepoy and immunity for the Coolie women of Delhi, unsexed by their brutal and shameless cruelty, would, one fancies, demand mercy also for the British workman and immunity for his wife and family. It is therefore somewhat startling to find that the British nation reserves to itself, though it forbids to its armies, the right of putting to death men, women, and children." That cholera in the past has killed many victims in England cannot be denied. As examples we may mention that in 1848 over 53,000 persons died from the disease in this country; and as late as 1866 14,378 deaths were referred to cholera in England, of which 5596 occurred in London. In the same year in Scotland 1170 cholera deaths were registered, and in Ireland 2501, of which 1459 occurred in Dublin. It has been, unfortunately, the custom for English Governments, in the past at least, to regard the advice of their medical experts with some distrust. Sanitary reformers have been regarded as dreamers, theorists, enthusiasts, unpractical men, faddists, to follow whose advice would cost the nation money. This view is not unknown in the present day, but the cost of sanitary works and the cost of sanitary administration in this country have more than justified themselves, not only in respect of cholera, but as regards other preventable diseases. The pioneers in this good work did not live to see the fruit of their labours, but they died in faith, as all good and true men die, "not having received the promises," but their works live after them.

Having attained this power over cholera, England cannot afford to relax her efforts. Pandemics of cholera arising in India sweep from time to time across Asia from east to west, and reaching the borders of Europe follow the usual route and penetrate into the interior of Russia by way of Astrachan and the mouth of the Volga. From Russia, whose neglected sanitary condition must be regarded as a menace to the health of Europe, the infection, as we have seen, is liable to be carried by rail, by river, or by sea to other western countries. It is, therefore, necessary to maintain a high standard of sanitation in England through constant and systematic inspection of our riparian and inland districts; we must maintain our line of sentries at our ports

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and a certain amount of Latin. He walked all day, and as evening drew on he played Irish airs on his flute which won him a night's lodging from the peasantry. He occasionally put up at a religious house, where it was still the custom that on certain days any wandering scholar who could maintain a thesis with ability would be rewarded with a little money, a dinner, and a bed. "Thus," he says, "I fought my way from convent to convent, walked from city to city, examined mankind more nearly, and, if I may so express it, saw both sides of the picture." He eventually arrived at Padua, in which University he may have taken his degree, although, on the other hand, the credit of so celebrated a graduate may be claimed by Louvain. He returned to England in 1756, as usual penniless. For a further account of his struggles, his debts, his successes, and his charities, all ably set forth in Sir James Crichton-Browne's address, we have not the space. That delightful comedy, *She Stoops to Conquer*, was first acted on March 15th, 1773. Walpole allows that it "succeeded prodigiously," and, he adds, "makes you laugh very much"; yet "it is a very wretched comedy." He died in 1774 from what Walpole calls a "purple fever." Sir James Crichton-Browne considers that probably the cause of death was chronic nephritis and uræmia, possibly assisted by James' powders, which despite the entreaties of his medical man Goldsmith insisted on taking. So ended at the early age of 46 years one of the most attractive characters in literature. Johnson loved, admired, and helped him, and as to his writings, they are the treasures of all who read them. Well did Sir James Crichton-Browne say of the poems that they "seem to have the sweet scent of Surrey lavender, delicate and refreshing amid the pungent surprises and meretricious suggestions of modern perfumery of the coal tar series." Walpole's dicta, "Goldsmith was an idiot, with once or twice a fit of parts," and "the poor soul had sometimes parts, but never common sense," are, we fear, true to a certain extent, but for happiness and the power of making other people happy compare his life to that of Swift, whose life was a chronic fit of parts. In more religions than one blessings are promised to the foolish, and if Goldsmith was foolish in a worldly sense he certainly gained the blessings.

THE MEDICAL DIRECTORY, 1910.

Messrs. J. and A. Churchill have issued their sixty-sixth annual Medical Directory [1] for London, the United Kingdom, and the Services, and we find it fuller of information than ever. On an early page is a tabulated numerical summary of the medical profession in each of the first 10 years of the present century. Whereas there were 36,354 qualified medical practitioners in 1901, there has been an annual increase ever since, the smallest increase of 289 having occurred in 1908–1909. The present issue shows an increase of 566 names over last year, and there are now 40,558 names of men and women holding British qualifications on the directory. Of these, 6427 reside in the London district, 17,568 in the English provinces, 1403 in Wales, 3947 in Scotland, 2723 in Ireland, 5188 abroad, whilst 3302 are in the services. An addition to the work is a section devoted to British health resorts compiled by Mr. Norman Hay Forbes, F.R.C.S. Edin., in which brief descriptions are given of the topography, soil, and climate of 82 places in the British Isles, with a note of the diseases which may be treated advantageously at each. This section should be of use to many practitioners, for so far as we have tested the information it contains it is compiled with accuracy. We think it likely that the publishers will have difficulty in keeping it within its present limits. The list of hospitals in the London district has undergone some revision and the summary of the principal laws affecting the medical profession, for which Mr. W. O. Hodges is now responsible, remains a valuable part of the work. The scope of the biographical details is unaltered.

[1] The Medical Directory, 1910. London: J. and A. Churchill. Pp. xxxvi. + 2071. Price 14s. net.

THE DESTRUCTION OF RATS ON SHIPBOARD.

THE depredations of rats are notoriously a source of great loss to farmers, grain-merchants, and most of the traders concerned in the production and distribution of food-supplies, but no systematic destruction of rats on a large scale was attempted until microscopists discovered that they were liable to be infected with the bacillus of plague. Bacteriological research here came to the assistance of practical medicine in explaining both the causation of sporadic cases of plague in the human subject and the recurrence of epidemics which had apparently come to an end. Rats invariably abound in waterside warehouses and storage places, and as they come and go quite freely between wharves and the vessels lying alongside it immediately became evident that rats on board a vessel might convey plague from port to port, even across a great expanse of sea, without any cases among the crew. Hence the anxiety of sanitarians and epidemiologists for the extermination of rats on shipboard. It will be remembered that the Maritime Medicine section of the recent International Medical Congress discussed the means available. (THE LANCET, Sept. 18th, p. 875.) Many methods have been suggested for this purpose and a useful summary of them will be found in an article by Dr. Carl Prausnitz published in the July-October issue of the *Journal of the Incorporated Society for the Destruction of Vermin*. He first mentions the carrying of dogs, cats, and ferrets, although it is obvious that they would be of little service on board large vessels with holds full of cargo. Much more may be accomplished by the use of traps, several varieties of which are described and figured in the article; a well-known shipping company, Messrs. Elder Dempster and Co., pay a reward of 2*d*. for each rat caught on board their vessels, with the result that over 10,000 were destroyed during the year 1908; on an average between 20 and 30 rats were captured on each ship, with a maximum yield of 62 on one vessel. Poisons are also used for killing rats. One such poison is prepared from the pharmacopœial squill, whilst another consists of a powdery bait mixed with plaster-of-Paris, which proves fatal by absorbing moisture in the stomach of the animal and then hardening. The ordinary poisons used for rats—namely, phosphorus, arsenic, and strychnine—are hardly superior in their action to traps, while being at the same time liable to prove fatal to human beings, either by careless handling or through criminal intent. Phosphorous preparations are readily eaten by rats, especially if they are made up with plenty of fat, which, besides rendering them more palatable, also increases their toxicity. Such preparations are only reliable if smelling strongly of phosphorus, since under the oxidising influence of air they are gradually transformed into non-poisonous compounds, and therefore require to be renewed at short intervals. The smell given off by phosphorus by its warning effect also lessens the risk of danger to human life. It has been suggested that the luminosity of phosphorus in the dark attracts the rats. Poisonous gases are more efficacious for the destruction of rats on shipboard. Formerly it was the custom to take about one pound of sulphur and two pounds of charcoal per 1000 cubic feet of hold space: these were placed in braziers in the empty holds and allowed to burn with a slow flame. The hatches being battened down and the ventilators closed the flame extinguished itself as soon as sufficient charcoal

had been burnt to produce from 2 to 3 per cent. of carbonic acid in the air. After 10 hours the hatches were opened. This method is still used in some ports as a preventive measure before a vessel is loaded. Instead of the combustion of sulphur R. Pictet suggested the use of a mixture of compressed and liquefied sulphur dioxide and carbonic acid, contained in cylinders. This mixture, which he called "pictolin," is expensive and its use has not been generally adopted. Carbonic acid alone is not of much value, as rats can live in an atmosphere containing as much as 30 per cent., whilst lights cease to burn in 12·5 per cent. of carbonic acid. Carbon monoxide, on the other hand, is extremely fatal to rodents and is easily obtained at a low cost by burning coke in a limited supply of air. Dr. Prausnitz gives a full description of the apparatus designed by Dr. Nocht and Dr. Giemsa for this purpose and now in routine use in the port of Hamburg for all ships carrying plague-infected rats. Owing to the high penetrative power of the gas this method may be used in a fully laden ship, but there is a danger of persons losing their lives through accidentally inhaling the gas, and there is the further drawback that it does not destroy either insects or infection. Some of these disadvantages are obviated by the Clayton method, in which the gas employed is sulphur dioxide obtained by the combustion of roll sulphur. This method was invented by Mr. T. A. Clayton in conjunction with Dr. S. R. Olliphant, the President of the State Board of Health, Louisiana. It has been extensively employed both for purposes of fire extinction and for the destruction of all kinds of vermin. The complicated apparatus required for working the process is fully described by Dr. Prausnitz, as well as the "Marot" method and Dr. Wade's "auto-injector method," in both of which liquefied sulphur dioxide stored in drums is used. It has been proposed to destroy rats by laying down preparations containing a bacterial virus, which produces fatal septicæmia in a few days, and which might be propagated by healthy rats eating the dead ones. The objection to these preparations, at least for use on shipboard, is that the organisms in question belong to the paratyphoid or enteritis group, which give rise to the well-known occasional outbreaks of food poisoning or so-called "ptomaine" poisoning.

THE NATIONAL LEAGUE FOR PHYSICAL EDUCATION AND IMPROVEMENT.

THIS league, which held its fourth annual meeting at the Royal United Service Institute under the presidency of the Bishop of Ripon on Dec. 9th, exists to stimulate public interest in the physical improvement of the people, to coördinate and extend the work of agencies already established, and to start new organisations for the same end; to make known the legal sanitary powers already possessed by public authorities and to promote fresh legislation where necessary. The membership now is considerable and last year there was a substantial increase in subscriptions and donations, but the extension of the work obviously depends largely on continually growing financial support. The working alliance between the league and the British Institute of Social Service has proved advantageous. The report alludes with regret to the resignation of Mr. F. J. Matheson, the joint secretary of the two organisations, and of Dr. May Thorne from the executive council, and records the election to that body of Mr. James Cantlie and Mr. F. E. Fremantle. The new work which is contemplated during the coming year includes the formation of a London Directory of Health Promoting Agencies, whether supported by the State or by voluntary aid, including particulars of gymnastic and drill classes and country holiday camps. An investigation is also being made into the medical inspection of children in institutions, such as orphanages and special homes for defective children. Two joint committees of the league considered during the year the questions of physical education and of the milk-supply. The former unanimously adopted a series of recommendations that the physical education of school children should be compulsory in all schools subject to proper medical control, and that it should form part of the regular school curriculum and not be carried out in the hours of play, that thoroughly qualified gymnastic specialists should be attached to all secondary and intermediate schools, and that the Swedish system should form the basis of their instruction. The chief of the remaining sections of the report dealt with the branch reports of the league and with the sale of its publications. The amount of sales was a most satisfactory feature of the year's work; for instance, the sale of the leaflet on "How to Bring up a Baby" had increased from 8000 in the previous year to 38,000 in the year under review. At the meeting to which this report was presented the following resolutions were submitted and adopted. On the motion of Sir Hugh Beevor, seconded by Sir Lauder Brunton:—

This meeting deeply regrets that the legislation so imperatively required for the purpose of ensuring a pure milk-supply throughout the country has been deferred, and urges all Members of Parliament, irrespective of party, to unite in passing the requisite Bill into law as soon as possible in the course of the ensuing year.

On the motion of Sir William S. Church, seconded by Lord Meath:—

This meeting heartily welcomes the steps which have been taken to secure the national recognition of the importance of physical training and exercises under the most approved systems in schools of all grades, but is convinced that in order to provide a sufficient number of competent teachers in this department, it is essential that institutes for the training and certification of such teachers be established at the public expense.

And on the motion of Sir Richard Caton, seconded by Mr. Douglas Eyre:—

Whatever reforms eventually result from the reports of the Royal Commission on the Poor-law it is of urgent importance for the community to secure without delay adequate provision:

(*a*) For the treatment of the mentally defective separately and apart from all other persons requiring public assistance.

(*b*) For the boarding-out and training for rural industries, not only at home, but also in the colonies, of State children, and their disassociation as far as possible from institutional treatment and from the atmosphere of pauperism.

Those who wish to express their sympathy with the league in a practical manner should communicate with the secretary, Denison House, Vauxhall Bridge-road, S.W.

BROCA'S CONVOLUTION AND MOTOR APHASIA.

AT a meeting of the Société Clinique de Médecine Mentale of Paris held on July 19th M. Marcel Briand and M. Brissot exhibited the brain of a case of motor aphasia of considerable interest, as the patient had been under observation for a number of years, and her clinical history had been published by Dejerine in 1898. A report of the communication will be found in the *Revue de Psychiatrie* for August. In 1896, at the age of 27 years, an apparently healthy young woman suddenly was seized with a stroke of paralysis and fell to the ground, remaining unconscious for ten hours. On recovering her senses she found herself to be hemiplegic on the right side and to have lost all power of speech. Before the ictus she had been able to speak four languages, French, German, Italian, and Spanish, but from that moment and afterwards she was unable to pronounce anything more than the two simple words, "oh non." A slight degree of word blindness, which was remarked, disappeared after a few months. The patient came under the observation of Professor Dejerine at the Salpêtrière, who considered the case very striking, the intelligence being of a high order and other cerebral functions being to all appearance intact. Her condition remained practically unchanged for ten years. Re-examination by M. Briand in May, 1908, showed the

existence of a spastic right hemiplegia, with exaggerated reflexes on that side. Spontaneous speech was *nil*, except for "oh non," used correctly and in its proper sense, however. The patient was unable to repeat words on request. With the letters of the alphabet before her she was able to spell out any word in any of her four languages, either spontaneously or to order. There was not the slightest trace of word deafness in any of these languages. Writing was perfectly performed with the left hand, spontaneously and to dictation, and copying was accurate. There was neither mind blindness nor mind deafness; no astereognosis or apraxia. There was no indication whatever of intellectual defect; the patient was well aware of her surroundings, of events in her life; memory, attention, and judgment were unimpaired. The case appeared to be one of pure motor aphasia, and in view of recent controversies unusually valuable. On May 15th, 1909, death occurred from renal causes and a necropsy was secured. The whole of the posterior end of the third left frontal convolution was completely destroyed by an old area of softening. In addition, on the right side another area of softening involved the inferior parietal convolution and the anterior and superior part of the angular gyrus. This cavity was roughly 2 centimetres in diameter and 2½ centimetres in depth, yet it had given rise to no symptoms of sensory aphasia. In view of the contention of some members of the Parisian school that Broca's convolution has nothing to do with the production of motor aphasia, a case of the above description ought to be noted by all who are interested in the subject.

THE KEEPING OF PIGS.

TASTE in the matter of pig-keeping varies a good deal in different parts of the world and, indeed, of the British Isles, and those who have wandered about the rural districts of Ireland must have felt that difficulties might arise in any very vigorous attempt to exact a very high standard in the matter. But even in Ireland common consent has accepted a different standard for urban as against purely rural districts. In England and Wales Section 47 of the Public Health Act, 1875, provides for a penalty against any person who in an urban district keeps any swine or pigsty in any dwelling-house, or so as to be a nuisance to any person, while Section 91 provides that any animal so kept as to be a nuisance or injurious to health is an offence. Although in England swine are very rarely, if ever, found actually kept in dwelling-houses, they are frequently, especially in some districts where the pork industry flourishes, kept under eminently undesirable conditions, and in this connexion a correspondent refers to an instance in which premises under a carpenter's workshop have been let and the tenant keeps pigs therein. It is not quite clear from our correspondent's communication whether the pigs are kept in a part of the premises in actual occupation of the new tenant, or whether the tenant simply uses all the premises for the purpose of pig-keeping. In any case the stench arising from the pig-keeping is so great that the carpenter cannot pursue his calling, and our correspondent asks whether the odour is injurious to health. It seems to us that the case is one, whether in an urban or rural district, in which the local medical officer of health and sanitary inspector ought to be able to afford the carpenter relief, and if by any chance the circumstances were such that the Public Health Act would not touch this case, possibly the carpenter might obtain redress at common law. In many places by-laws have been sanctioned relative to the minimum distance from dwellings at which pigs may be kept, and we believe that a distance of 100 feet has been allowed in some instances. The pig is the victim of what Dr. Ballard, in his classic writings on offensive trades and the like, regards as a mistaken popular prejudice, and this prejudice militates against any trouble being taken to keep pigs in a cleanly state. In Ballard's view the pig is naturally a clean, not a dirty, animal, and his wallowing in the mire has for its object cutaneous cleansing, the mud standing to the pig in relation to soap to the human being, this mud when dry caking and falling off and carrying with it the hairs and cutaneous débris which irritate him. Similarly Ballard is found in defence of the good habits of the pig. The animal, according to him, does not habitually prefer disgusting food. In the wild state the pig does not eat garbage, but acorns, roots, and fallen fruits. It is said, too, that pigs which are provided with outdoor runs will never foul their beds, and that on very large pig runs, where pigs are provided with shelters for the night, a pig fouling the common bed is very severely handled by his fellows. There can certainly be no question that pigs may easily be kept in a cleanly state in properly constructed sties, and the more modern by-laws in reference to pig-keeping have relation more to the method of keeping the pigs than to the position of the sties. Experience shows that pigs kept in a thoroughly cleanly state thrive better than when in filth, and the nuisance relating to pig-keeping may by the exercise of moderate care be reduced to very small dimensions.

CHRONIC INFECTIVE ENDOCARDITIS.

BLOOD cultures made during life frequently serve to establish the nature of a febrile infection, and this is especially true in regard to infective endocarditis, both acute and chronic. That a peculiar form of infective endocarditis characterised by chronicity exists has been established by Professor W. Osler, and his account of ten cases published in the last issue of the *Quarterly Journal of Medicine* is an interesting contribution to the literature of the subject. Dr. Frank Billings of Chicago also gives details of 14 cases of chronic infective endocarditis, which he has himself observed, in an interesting paper in the *Archives of Internal Medicine* of Nov. 15th. He finds, as in the cases seen by Professor Osler, that the disease may be manifested for long periods by a slight feverish condition only. He is, however, of opinion that other symptoms are usually present but that they escape observation. Chills of varying severity, coming on at irregular intervals, and followed by fever and sweating, sometimes occur, and the cases may be mistaken for incipient tuberculosis, for colds, or for malaria. In his own series many of the cases showed a protracted course: in one patient the symptoms commenced two years before the condition was diagnosed, in another 14 months. A noteworthy feature of the condition is that in many instances the patients are ambulatory and do not become bedridden until some months have elapsed. Bacteriological investigation of the 14 cases showed the pneumococcus in 11 cases and a streptococcus in three. Dr. E. C. Rosenow, investigating these organisms, found that those obtained in the 11 patients with pneumococcæmia had many of the morphological characters of streptococci, but cultural and animal experiments demonstrated that they were pneumococci. They all produced fine colonies on blood-agar plates. Hæmolysis did not occur. When grown in isolated colonies on the surface of blood-agar slants they all had a greater or lesser tendency to adhere tightly to the surface, and the more chronic the case and the later in the course of the disease the organism was isolated, the more marked was this tendency to adhere. The organism is Gram-positive; as a rule it is not surrounded by a capsule, and when grown in broth or litmus milk it forms diplococci with many very long conglomerate

chains. Cultures from all the patients showed a low degree of virulence towards animals, but endocarditis and pericarditis were obtained whether the organisms were administered subcutaneously or by intraperitoneal or intravenous injection. The three cases in which a streptococcus was reported were not examined as fully as the others, and Dr. Rosenow believes that had this been done they also would have been proved to be pneumococci. Dr. Billings suggests that in all cases where streptococcal forms are isolated from the blood these further investigations should be made, since they may possibly establish that the pneumococcus is the most frequent infective agent in endocarditis. With regard to the source of infection in his cases, Dr. Billings found that in one the condition followed pneumonia, in two tonsillitis had preceded it, and in two others alveolar abscess had occurred. In one case influenza was a possible factor in the genesis of the infection. An old heart lesion was present in seven of the cases, six of whom had suffered from rheumatic fever; the remaining one had had chorea. The valves involved in the 14 cases were as follows: aortic valve alone in 1; mitral alone in 6; pulmonary semilunars alone in 1; both aortic and mitral in 5; and mitral and tricuspid together in 1. With regard to treatment by vaccines, Dr. Billings found that inoculations of patients with large doses of their own dead pneumococci was always harmful and that small doses were devoid of benefit and even probably harmful.

THE PROPOSAL TO APPOINT A NEW MEDICAL OFFICER TO THE LONDON COUNTY COUNCIL.

As we announced last week, a subcommittee of the education committee of the London County Council has reported in favour of recommending the Council to appoint an additional assistant medical officer in the public health department, on account of the great amount of extra work entailed on that department by the systematic medical examination and treatment of school children. The subcommittee's report stated that when Dr. James Kerr was appointed as school medical officer by the London School Board his duties were to supervise the medical work generally, conduct correspondence, examine male candidates for employment, visit schools where outbreaks of infectious disease occurred, conduct inquiries, and give advice. It was possible to carry out these duties in 1902, but there had been a rapid expansion since, and it was now quite impossible for Dr. Kerr to exercise effective supervision without further assistance. The staff requiring superintendence numbered in 1902—medical, 3; nursing, 1; clerical, 4; in 1909 the corresponding figures were 68, 54, and 28. Even these figures did not adequately represent the actual increase in the scope of the work. Various schemes had been developed since 1902 and were now in full working order, and in all departments the amount of detail was far greater. The Council now undertook the cleansing (heads, bodies, and clothes) of the children and examined their vision; it had established a laboratory for the bacteriological control of diphtheria; it exercised control of ringworm diagnosis; undertook inquiries into measles and scarlet fever, conditions of special senses, blindness, deafness, and aphasia; the medical examination of all scholarship candidates and the inspection of students in training colleges, pupil teachers, and the scholars of secondary and trade schools. The medical officer had to supervise all this work and many other matters too numerous to mention, and it was now almost impossible for him to master many recent developments, his whole time being occupied by the work already undertaken. The work of the care committees, the feeding of school children, questions of physical exercises, and the teaching of hygiene all required more thorough organisation, but the medical officer could not undertake it without further assistance. The subcommittee thought the superintendence of the outside medical staff was almost one officer's work, and that the medical men and nurses should be seen at work not only in the statutory medical inspection but also in their duties in connexion with cleansing, special schools, and many other things. The relation in which the medical side of the Council's work had been brought recently with the sanitary work of the borough councils had necessitated a great amount of personal visiting and conferences with the medical officers of health of the various boroughs. The only full-time assistant medical officer was appointed in 1903, prior to the passing of the Education (Administrative Provisions) and Children Acts. The consideration of the report was postponed by the education committee, and even if it should reach the Council during the present session the past policy of that body does not give us much hope that the appointment will be made. There is no doubt that a strong case has been made out for it, but the creation of a new salary beginning at £500 a year and rising to £700 will probably give prolonged pause before action.

THE DEATH OF DR. LUDWIG MOND, F.R.S.

THE death of Dr. Ludwig Mond, F.R.S., on Dec. 11th last, removes a giant amongst the industrial chemists of the country. His chemical researches have met with enormous practical applications, none of which, however, can be compared for commercial importance with his discovery, which was the outcome of both his chemical and engineering knowledge, of the use of ammonia and carbonic acid gas in the conversion of common salt into carbonate of soda. He also observed the formation of those curious metallo-gases known as carbonyls, of which iron and nickel carbonyl are the most familiar examples. They are gaseous compounds of the metals with carbonic oxide, and the principle is now carried into effect in recovering nickel from its ore and for the purposes of purification. Dr. Ludwig Mond worked hard to encourage research, especially amongst young chemists with limited means at their disposal. He founded the Davy-Faraday Laboratory of the Royal Institution and having fitted it with all the appliances necessary for modern chemical research gave it an ample endowment. The investment has proved a fruitful one for chemical science, for some excellent and valuable original work has been done in the Davy-Faraday Laboratory. Dr. Ludwig Mond's name will go down to posterity as that of a man who did much to show the power and importance of research and who gave abundantly by various ways and means the opportunity to others of seeking out new facts. Can a man of science seek a better verdict?

RESEARCH DEFENCE SOCIETY.

THE meeting held at the Royal Pavilion, Brighton, on Dec. 13th, under the auspices of the Research Defence Society, was well attended, and the formation of the Brighton and Sussex branch was confirmed. The Earl of Cromer, as President of the society, presided, and he was supported by a thoroughly representative gathering of the medical profession in Brighton and Hove and other parts of Sussex. Lord Cromer, in opening the proceedings, alluded to the great loss the nation in general, and more especially those interested in medical research, had sustained by the death of Lord Selby, chairman of the Commission appointed a few years ago to inquire into the question of vivisection. Mr. Abel Ram, who was also a member of the Commission, had succeeded Lord Selby as chairman, and Lord Cromer remarked that he had been in communication with that gentleman, who had promised to do his utmost to secure

the issue of the report early in the new year. Lord Cromer went on to say that humanity was on the side of those who devoted their time, their money, their unselfish labours, and sometimes their health to preserving and prolonging human life. Everybody who chose to go into the subject could satisfy himself beyond any manner of doubt as to the splendid results which had been achieved by bacteriological research. The most eminent men in the medical profession were practically agreed on the point, and, moreover, they were agreed on the fact that this knowledge would never have been reached had it not been for experiments on animals. He showed that in the proceedings of scientific research pain was very rarely inflicted, and that when it was inflicted it was amply justified by the results which had been obtained in preserving human life and in diminishing human suffering. Sir Arthur Conan Doyle, as president of the newly-formed branch, pointed out that of 88,000 experiments on animals conducted last year 85,000 were merely inoculations or injections, and he held that their opponents, who encouraged the abattoir and discouraged the laboratory, were in a most absurd and illogical position.

THE LATE SIR ALFRED JONES, K.C.M.G.

BY the death of Sir Alfred Jones not English medicine only has lost a notable benefactor, for the world has been the gainer from the results achieved already by the Liverpool School of Tropical Medicine, of which he was chairman and virtually the founder, so large a share did he take in its endowment. He was one of the most striking personalities in British commerce, and had the qualities of enterprise and imagination which well entitled him to the name of merchant prince. In no manner was this better shown than in his practical interest in the advance of tropical medicine and in the equipment of expeditions to investigate its problems *in partibus*. Whereas the early merchant adventurers of England went forth prepared to win their fortunes by fire and sword, Sir Alfred Jones prepared the way for his modern argosies by subsidising men of science to investigate the causes of the diseases that play havoc with human life in tropical countries and the means by which they may be prevented, having the foresight to realise that by such means alone will the ruling nations be able to draw their full commercial tribute from the most fertile regions of the earth, whilst at the same time life will be made more secure for the subject races. In another application of science to trade Sir Alfred Jones showed his sagacity. By constructing special holds in his ships and making arrangements for the careful regulation of their temperature (which was charted four-hourly during the voyage) he proved that it was possible to transport bananas in excellent condition and in enormous quantities from the Canaries and the West Indies to this country, whereby not only his firm were the gainers but also the many poor people to whom a wholesome and palatable fruit was made available at a low price. We have said enough to show that commerce and medicine unite in real regret for the unexpected death of Sir Alfred Jones, a regret felt nowhere more sincerely than in his own city of Liverpool.

A FURTHER NOTE ON ENTERICIN.

WE have received a further communication from Mr. John Maberly of Woodstock, Cape Colony, on the subject of entericin, about which an annotation was published in THE LANCET of Nov. 6th. He states that the plant Monsonia biflora, from which he has obtained this substance, belongs to the natural order Geraniaceæ, and that it grows scattered over the high veldts of South Africa. An allied species, the Monsonia ovata, grows along the coast belt, especially of the eastern side. He was unable to separate any alkaloid or glucoside, and in his endeavours to separate the active principles of the plant he obtained two sets of bodies—first, bodies of "indefinite chemical composition," to which he applied the name of "entericin," and a second group with astringent properties, to which he attributes the constipating effect produced by the tincture in some cases. In summing up his conclusions he states that the tincture has a distinct curative action on the ulcerative processes in the intestine at any stage of enteric fever and that when given after about the seventeenth or eighteenth day it has the power of cutting short the fever as well. He believes that the mixture of substances to which he has applied the name of entericin, produces similar actions to those of the tincture, but probably with a smaller constipating effect. He does not think that either the tincture or entericin produces any effect in cutting short the course of the fever when administered between the seventh and seventeenth days of the disease, although he is of opinion that if they be given before the development of Widal's reaction they may do so. Between the seventh and seventeenth days they may in some cases produce abdominal pain, and blood in the motions, and Mr. Maberly therefore does not recommend the continuous administration of the drug within that period. He admits that the evidence he has is not sufficient to permit of any definite conclusions as to whether the tincture or any of its separate constituents is the more efficacious. It would seem possible that in Monsonia biflora we possess an agent which is worthy of more extended investigation and trial, both from the pharmaceutical and therapeutic aspects.

A SURVEY OF THE PRESENT POSITION OF CANCER RESEARCH.

AT a well-attended conversazione held at the Polyclinic on the evening of Dec. 10th the chief feature was a brief but extremely interesting demonstration by Dr. E. F. Bashford on some aspects of the investigations of the Imperial Cancer Research, illustrated by lantern slides chiefly representing mice affected with experimental cancer of various organs. Having illustrated the similarities of the disease in uncivilised races of mankind and in animals, Dr. Bashford exhibited slides showing the completeness with which the lesions of cancer could be reproduced experimentally. While the conveyance of cancer from one animal to another by implanting a few living cancer cells might appear at first to demonstrate the reason for the great frequency of the disease, he held that facts proved that cancer was very rarely if ever so transmitted naturally. Subjects of cancer, whether naturally arising or artificially induced, were not sources of danger to other animals. The phenomena of resistance to the inoculation of cancer were explained. A sarcoma of a cat or mouse inoculated into rats would not grow in them, nor did such "vaccinations" protect the rats against subsequent inoculation of a rat sarcoma. Protection, on the other hand, could be induced by the "vaccination" of tumours as well as of the normal tissues of the same species, and even by the "vaccination" of an individual's own tissues. Animals could cure themselves of their tumours. Under given circumstances even 100 per cent. of the inoculated animals did so, and then they were protected against later inoculation of the same tumour. Experiment had demonstrated that a natural cure for cancer did exist, and had already placed in the hands of investigators weapons for ferreting out the nature of its mechanism. Although Dr. Bashford said he would only guarantee at present to protect any animal against inoculation, the evidence that the continued growth of inoculated tumours had been modified, and even brought

to a standstill, was already strong. Nevertheless, this result was still too inconstantly and uncertainly attained for him to arouse hopes of replacing empirical remedies in the immediate future. Meantime there was no alternative to surgical treatment. All empirical modes of treatment had one weakness in common, they only attacked the primary growth; even surgery was largely helpless to deal with metastases. The natural cure for cancer, when found, would be subject to no such limitation. Its triumphs would, in all probability, be in the direction of preventing dissemination and metastases formation. The lecture was listened to attentively and received with much applause.

THE Nobel prize in medicine has been awarded to Professor Theodor Kocher, who has gained a world-wide reputation in connexion with the surgery of the thyroid gland. Professor Wilhelm Ostwald of Leipsic has gained the prize in chemistry, and the prize for physics has been divided between Mr. Marconi and Professor Karl Braun of Strassburg.

A TELEGRAM from the Governor of Mauritius to the Secretary of State for the Colonies states that 26 cases of plague, with 14 deaths, were reported during the week ending Dec. 9th.

THE seventy-first annual report of the Registrar-General of Births, Deaths, and Marriages in England and Wales has been issued this week.

THE first volume of the Army Medical Report for 1908 was published on Dec. 14th.

THE CARE OF POOR-LAW CHILDREN IN BRIGHTON.—For the first time the South-Eastern and Metropolitan Poor-law Conference held its sitting in Brighton last week. The delegates received a mayoral and hospitable welcome, and the Majority and Minority Reports of the Poor-law Commission were vigorously criticised. Discussion on the care of the children occupied the whole of one day's sitting, and the work being carried on at Warren Farm Schools, Brighton, where some 250 boys and girls are being maintained by the guardians, was warmly commended. In reply to a delegate, it was stated that 95 per cent. of the children trained at Warren Farm succeeded in life. Several delegates visited the school and also the Brighton workhouse.

RUSSIAN EXHIBITION OF PSYCHIATRY.—The approaching third Russian Congress of Psychiatry and Neurology in St. Petersburg will be made the occasion of an interesting exhibition. It will be divided into scientific and practical sections. The former will contain subsections dealing with anatomy and physiology, neuro-pathology, psychiatry, experimental psychology, and instruments and bibliography. Besides specimens representing normal and abnormal conditions of the central nervous system there will be shown types and skulls of various races of Russia, apparatus and instruments for the investigation of mental and nervous diseases, tables and charts of results, photographs of patients, and so on. The latter section will have subsections dealing with the nursing of the mentally afflicted, criminology, and medico-pedagogy. Comparative tables the numbers of mentally afflicted in each given district and the total number of them cared for in the hospitals of the community will be collected, as well as tables showing the increase in the annual number of cases of various forms of mental disorder, a graphic representation of the influence of the Russo-Japanese war and the revolutionary movement on the abrupt rise in recent years in the number of the mentally afflicted and many others. The exhibition is being organised by the committee of the congress, with the director of the Psycho-neurological Institute, N. M. Bechtereff, at its head. All information respecting the exhibition can be had of Dr. N. Ya. Smieloff, chief doctor of the St. Panteleimon Hospital at Udielnoi, St. Petersburg.

THE BEIT MEMORIAL FELLOWSHIPS FOR MEDICAL RESEARCH.

WE have to report a most valuable instance of well-directed munificence. The following letter was read to the Senate of the University of London at its meeting on Wednesday, Dec. 15th:—

49, Belgrave-square, S.W. London, 10th Dec., 1909.

MY LORDS AND GENTLEMEN,—It will be within your recollection that my brother, the late Mr. Alfred Beit, in his lifetime and by his will, provided a sum of together £50,000 for the purpose of creating and assisting the Fund of the then proposed "Institute of Medical Sciences."

The formation of this institute owing to a series of circumstances having become impossible, the treasurers of the Fund were directed by an order of the High Court to return all moneys received for this purpose to the donors, and in consequence such part of the above sum as had already been paid was returned to my late brother's executors and by them paid over to me as his residuary legatee.

It has always been my earnest wish that these moneys in some way should again be devoted to a public purpose as nearly as possible identical with that which had been originally contemplated by my brother. After considerable deliberation with those who had advised him, a plan has been devised the details of which are embodied in the accompanying Deed of Foundation. To give this Fund such extent as to make it, as I sincerely hope, thoroughly useful, I have decided to increase the above-mentioned sum to £215,000 so as to yield by investment in Trustees' stocks an annual income of about £7500. I desire to name this Fund "The Beit Memorial Fellowships for Medical Research."

From this title, and on a perusal of the Deed, you will see that the Fund is to be devoted entirely to the furthering of medical research work in all its branches. A sum of £250 a year for three years is to be granted with this object to any man or woman of European descent, graduate of any approved University within the British Empire, who is elected to a Fellowship.

The Fund is to be administered by a Board of Trustees, who in their turn will be assisted by an Advisory Board of medical men. The names of those who have most kindly consented to act appear in the Deed, and I take this opportunity of expressing to both the Trustees and the members of the Advisory Board my sincere gratitude to them for undertaking the duties imposed upon them.

It is my most anxious wish to make this Fund a lasting memorial to my late brother, and I address myself, therefore, to your body, knowing as you do the deep interest Mr. Alfred Beit at all times took in the advancement of medicine and medical research. In view of the fact that such research is to be conducted almost entirely in institutions allied to the University, I venture to ask you to allow me to have the benefit of the advice of your Principal for the time being as one of the Trustees.

I feel convinced that the Trustees as well as the Advisory Board will at all times give every consideration to any recommendation your body may be good enough to put before them.—I have the honour to be,

My Lords and Gentlemen,

Your most obedient Servant.

To the Senate of the University of London. OTTO BEIT.

Mr. Beit's letter is so clear that no words are needed from us to explain either the scope or the significance of his magnificent generosity. Those who remember the whole story of the proposed "Institute of Medical Sciences" will heartily rejoice that the University of London and University Colleges and Institutes in London, the medical schools and hospitals of London, and the important Imperial and national services which have their home in London have been made the recipient of such a princely endowment. It is hardly necessary to add that when this letter was read to the Senate on Dec. 15th the offer was accepted in terms of the deepest gratitude.

The names of the first trustees are as follows:—The Right Honourable Viscount MILNER, G.C.B., G.C.M.G.; the Right Honourable Lord CURZON OF KEDLESTON, G.C.S.I., G.C.I.E.; the Right Honourable R. B. HALDANE, K.C., M.P.; the

Principal of the University of London (*ex-officio*) H. A. MIERS, D.Sc., F.R.S.; OTTO BEIT; JAMES KINGSTON FOWLER, M.A., M.D., D.Sc. (Hon.); BOURCHIER F. HAWKSLEY.

The Advisory Board is as follows:—Sir T. CLIFFORD ALLBUTT, K.C.B., M.D., F.R.S., Regius Professor of Physic, University of Cambridge; J. ROSE BRADFORD, M.D., D.Sc., F.R.S., Professor of Medicine, University College Hospital Medical School, Secretary of the Royal Society; JAMES KINGSTON FOWLER, M.A., M.D., D.Sc. (Hon.), Senior Physician to the Middlesex Hospital, late Dean of the Faculty of Medicine, University of London; C. J. MARTIN, M.B., F.R.S., Director of the Lister Institute of Preventive Medicine; WILLIAM OSLER, M.D., F.R.S., Regius Professor of Medicine, University of Oxford; E. H. STARLING, M.D., F.R.S., Professor of Physiology, University College, London, University of London.

The temporary office of the scheme is Seymour House, 17, Waterloo-place, Pall Mall, S.W., but all correspondence of candidates for Fellowships and of Fellows should be addressed to the Honorary Secretary, Beit Memorial Fellowships for Medical Research, 35, Clarges-street, Piccadilly, W.

INFORMATION ABOUT THE FELLOWSHIPS.

The Fellowships are open to any person of European descent by both parents, without restriction as to nationality, who at the date of election has taken a degree in any Faculty in any University in the British Empire approved by the trustees, or who, if a female, has passed an examination which would have entitled her, if a male, to take any such degree.

In exceptional cases the trustees may, on the recommendation of the Advisory Board, accept the possession by a Fellow at the date of election of a medical diploma registrable in the United Kingdom as a qualification for a Fellowship in lieu of a degree.

There are no restrictions as to age, and no person is disqualified on account of his or her religious or medical opinions.

Ten Fellowships of the annual value of £250 are awarded annually, or such larger or smaller number as the trustees may determine. No canvassing is allowed, and testimonials need not be sent with the applications.

The first election of Fellows will be made on or about March 1st, 1910. The notice of this election will be given on or about Dec. 18th, 1909 (see advertisement columns of THE LANCET, p. 62). Applications must be received on or before Jan. 17th, 1910.

The usual tenure of a Fellowship is for three years, subject to determination by the trustees at the end of the first or second year, if in their judgment the work of the Fellow during the year does not justify the retention of the Fellowship. In exceptional cases the Advisory Board may recommend the extension of the Fellowship for a further period of one year—i.e., four years in all—but no longer. A report must accompany any such recommendation giving the special reasons for the extension. The trustees may in their discretion, for what they may consider grave cause, suspend for such time as they may think fit or remove any Fellow from his Fellowship, and from that date his emoluments cease.

The following are the recognised places of research, and Fellows may carry on research only at the place authorised by the trustees.

A. *University and University Colleges and Institutes.*

1. The Physiological Laboratory of the University of London, South Kensington.
2. The Institute of Physiology, University College, London, University of London.
3. The Laboratories of the Departments of Chemisty, Biology, Physics, Anatomy, Pharmacology and Hygiene, University College, London, University of London.
4. The Laboratories of the Departments of Chemistry, Biology, Physics, Anatomy, Physiology, Pharmacology, and Hygiene, King's College, London, University of London.
5. The Brown Institution, University of London.

B. *Imperial and National Services.*

1. The Laboratories of the Royal Naval Medical Service, Haslar Hospital.
2. The Laboratories of the Royal Army Medical College, Millbank, S.W.
3. The Lister Institute of Preventive Medicine.
4. The Laboratories of the Imperial Cancer Research Fund.
5. The Cancer Research Laboratories of the Middlesex Hospital.
6. The Laboratories of the Royal Commission on Tuberculosis.
7. The Laboratory of the London County Asylum, Claybury, Woodford Bridge, Essex.
8. The London School of Tropical Medicine, Victoria and Albert Docks, S.E.
9. The Liverpool School of Tropical Medicine.
10. The Laboratories of the Royal Institute of Public Health, 37, Russell-square, W.C.
11. The Laboratory of King Edward VII.'s Sanatorium, Midhurst, Sussex.

C. *Medical Schools and Colleges and the Hospitals connected with them in all the Departments of their Work.*

Such hospitals and medical schools as are schools of the University of London.

D. *Such other Hospitals, Colleges, Medical Schools, including Schools of Tropical Medicine, Laboratories, or other places as may be approved by the Trustees after receiving a report from the Advisory Board.*

Fellows are required to devote the whole of their time to their authorised research, and publication of such research must bear upon the title page the words "Beit Memorial Research Fellow."

EPSOM COLLEGE: THE ANNUAL DINNER OF THE EPSOMIAN CLUB.—The annual dinner of the Epsomian Club was held on Thursday, Dec. 9th, at the Trocadéro Restaurant, Mr. Percival Turner being in the chair. There was a good assembly, among those present being Dr. R. H. Whitcombe, the Suffragan Bishop of Colchester, Sir Henry Morris, the treasurer of the College; Mr. J. B. Lamb, the secretary of the College; Mr. Frank Ree, general manager of the London and North-Western Railway; Dr. F. de Havilland Hall, Dr. W. Essex Wynter, Dr. H. Campbell Thomson, Dr. S. Squire Sprigge, Editor of THE LANCET; and Mr. Edred M. Corner, secretary of the Epsomian Club. Mr. Percival Turner gave the toast of "Floreat Epsomia" and commenced an excellent speech by apologising for taking the chair in the unavoidable absence through illness of Surgeon-General A. M. Branfoot, I.M.S. He testified to the continually progressing success of the school, while he described at some length the splendid block of buildings recently erected by the munificence of the late Mrs. Markham Skerritt, the equipment for scientific education included in which he claimed to be equal to, if not superior to that possessed by any public school in the kingdom. The headmaster, the Rev. T. N. H. Smith-Pearse, in reply, gave some interesting details in proof of the present high state of efficiency which the school has reached. Sir Henry Morris proposed "The Health of the Visitors," coupling the toast with the names of the Bishop of Colchester and Dr. Sprigge. He spoke in generous appreciative terms of the interest which had always been taken by THE LANCET in the prosperity of Epsom College, and mentioned the very practical benevolence shown to the College by the Wakley family. The Bishop of Colchester made a witty reply, in which he alluded to the time when he himself had been a small boy at Epsom College and had taken ladies' parts in the Epsom play. Dr. Sprigge congratulated the College on having definitely taken its place among the public schools of England, and pointed out that the facilities for scientific education alluded to by Mr. Percival Turner would be much appreciated by those intending to join the medical profession. Mr. Frank Ree also responded to the toast and gave some humorous reminiscences of the days when he was a schoolboy. Mr. C. L. Smiles proposed the health of "The Chairman," who responded briefly. The speeches were interspersed with music, songs being given by Mr. W. A. Mackay, Mr. J. N. Eggar, and Mr. J. S. Cotman, while Mr. C. E. Stredwick, a visitor, repaid his hosts with some excellent flute solos. The last song on the programme was an original and topical ballad, entitled "The Roast Beef of Old Epsom." This was rendered with much spirit by the Rev. C. E. Elcum, the vicar of St. Agnes, Liverpool, its author, the chorus being joined in by the assembled company.

THE STANDARDISATION OF DISINFECTANTS:

CRITICISMS OF OUR COMMISSIONERS' REPORT.

WE publish in another place various letters which we have received upon the recent report of our Commissioners, and below is the comment of our Commissioners upon the criticisms in these letters, with references also to correspondence on the subject published in other journals.

THE CHEMICAL SECTION OF THE REPORT.

Let us commence by saying that it is incorrect that the report of THE LANCET Commission had its starting point in a paper read by Mr. M. Wynter Blyth at the Applied Chemical Congress held in London in May, and in a paper published by Constant Ponder and G. Sims Woodhead in the *Journal of Pathology*, vol. xiii., p. 152, July. That is not the case, for the work of our Commissioners was discussed early in February, and commenced in March.

It is properly pointed out by one critic that the baryta method may be liable to error arising from the incomplete extraction of the phenols, and has quoted experiments which appear to lend colour to that view. We did not, however, found our faith in the process on a single control, as he states—that is, in a mixture containing not phenoloids but carbolic acid—for we said (p. 1457): "It should be added also that in the case of one of the commercial preparations examined the kind and amount of the components used in its manufacture were known." As to the varying degrees of solubility of different phenoloids it may be pointed out that baryta water was not used as the critic assumes, but 15 grammes of the hydrate in 100 cubic centimetres of boiling water, which is a quantity far in excess of that contained in an equal volume of baryta water. Further, it should be pointed out that in using baryta the decomposition of the soaps, &c., results in some caustic soda being formed in which, as he suggests, the phenoloids are probably more easily soluble. The method as regards both soap or resin emulsions and glue or gum emulsions is thus comparable. By first carefully emulsifying the disinfectant with water, by boiling it with a large excess of baryta under a reflux condenser, by washing the residue with warm baryta two or three times, taking care to rub down the mass with a stout glass rod, the extraction of practically all the phenoloid is ensured. Since receiving this criticism we made up the following mixture *containing phenoloids and not carbolic acid*:—

Phenoloids	31·24 per cent.
Soaps and resin	31·18 ,,
Water...	20·78 ,,
Neutral oil...	16·80 ,,
	100·00

The resin proved to form with baryta a mass somewhat difficult to deal with, in spite of which the results of three determinations of the phenoloids were as follows: phenoloid, 30·62 per cent., 30·98 per cent., 30·30 per cent. The estimation of the other constituents gave soap (fatty acids, resin, and soda), 31·58 per cent.; water, 21·00 per cent.; neutral hydrocarbons (by difference), 16·79 per cent. We submit again that these results give a fair statement of the composition of the synthetic fluid, but certain precautions must be observed. In the absence of resin or in the presence of soap there is no difficulty about complete extraction. As regards the weighing of the phenoloids, the results were good when the evaporation of the last portion of the ether was allowed to take place over anhydrous calcium chloride. In this connexion it may be pointed out that Jeyes' Fluid (No. 2) gives by this method 5·13 per cent. of phenols, and this fluid is "guaranteed exempt from the provisions of the Poisons Act," which means that it is intended to meet the clause in that Act which allows carbolic preparations containing not more than 3 per cent. of carbolic acid to be sold without a label stating that the contents are poisonous. The analytical method, therefore, in this case extracted rather more phenols than might have been expected. The comparatively large proportion of hydrocarbons in this preparation do not appear, as is suggested, to enhance its germicidal power, since the carbolic coefficient was only 0·75, the $\frac{P-B}{3}$ value being 1·0.

We have not attempted to offer any explanation of the differences given by the bromine value in terms of carbolic acid and the actual weight of phenoloid found, but it is certainly remarkable that a series of figures, call them arbitrary if we will, worked out in the way described should set out an order of germicidal efficiency determined by independent bacteriological experiment.

The ingenious criticisms (contained in the *Medical Officer* of Nov. 27th and Dec. 4th, 1909) might have been taken seriously if we could think for a moment that they were based on laboratory trial of the L.A.B. method. Practically all of the writer's points are met by the fact that the L.A.B. chemical method *gave correct results with mixtures the composition of which was absolutely known.* We have nothing to say about what the writer calls his acetone method, and we daresay it gives good results; but in the practice of the public health laboratory it is inconvenient and involves the use of considerable quantities of reagents. The suggestion to use acetone in the analyses of disinfectants originated in THE LANCET Laboratory, though the fact was not acknowledged, and we are glad that it has been found to be serviceable. Further laboratory experience will probably lead to more importance being attached than is the case now to the bromine value, the determination of which in THE LANCET experiments did not admit of the error (due to absorption of iodine by the bromo-phenoloid) which is crudely suggested. The articles in the *Medical Officer* illustrate once more the desirability of the subject of disinfectants being discussed by independent scientific authorities.

In a letter published in the *British and Colonial Druggist* of Dec. 10th, 1909, Messrs. Jeyes' Sanitary Compounds Company state that our Commissioners say that "the greater the percentage of phenoloids in a disinfectant the greater must be its germicidal activity." Our Commissioners did not say this. What they said was that "chemistry suggests the germicidal potentials of a disinfectant, and it is for bacteriology to tell us how far these potentials are realised under varying conditions," and that "when we come to compare *the chemical behaviour* of the various phenolic constituents of disinfectants with the bacteriological findings we shall see that under certain conditions the carbolic coefficients calculated upon the results of bacteriological experiment appears to be indicated by certain chemical *factors*." In a great many cases, however, the *quantity* of phenols present did indicate a definite bacteriological *quality*. Messrs. Jeyes' Fluid, for instance, showed by analysis 17·80 per cent. of phenols, and its carbolic acid coefficient (mean) was 1·7, the $\frac{P-B}{3}$ value being 2·1, while Jeyes' Fluid No. 2 was found to contain 5·13 per cent. of phenols and its carbolic acid coefficient was 0·75, the $\frac{P-B}{3}$ value being 1·0. It is difficult to suggest in the face of these results that there is no relationship whatever between the amount of phenol body present and the germicidal efficiency of the preparation.

THE BACTERIOLOGICAL SECTION OF THE REPORT.

Criticism of the work in the bacteriological section of this report has, we cannot but think, been answered in anticipation in our summary of conclusions, and were it not that we are anxious to give, and in return to obtain, as much information as possible, we should now feel almost satisfied in having been able to bring erstwhile antagonists into line even though they are against some of the minor conclusions of our report.

It may afford some satisfaction to those interested, to know that our work was undertaken partly in order to cut short, if possible, a discussion that was becoming somewhat acrimonious, carried on by certain of those interested in disinfectants of various brands, a discussion that seemed likely to be prolonged indefinitely unless, to the advantage of the public, the matter was taken in hand and settled point by point by impartial observers.

As we wish to eliminate as far as possible any personal element we will answer our critics as a body and not as individuals, and in addition to the letters printed in the

present number of THE LANCET we refer to articles by Mr. M. Wynter Blyth in the *Medical Officer* of Nov. 27th and Dec. 4th.

We will begin by saying that we think some of our statements have not been read with sufficient care. It is not realised, for example, how few are the unbiased data available on which to base a study of disinfectants acting on naked cultures, and we point out that this may be because the methods employed are somewhat difficult to apply and even when successful give comparatively meagre information. In these circumstances, as we have pointed out, there is some excuse for those interested in special disinfectants who read results comparatively favourable to those disinfectants when applying these methods.

Our report deals with what, after all, must be the first question to be settled—the relative power of disinfectants to kill a naked culture; and we show that fairly consistent results may be obtained by a modification of a method the principle of which, if properly applied, is thoroughly sound, within a strictly limited set of conditions. We published our results at this stage of our investigation because we know that for some time to come those who buy and sell disinfectants will fix the money value by the carbolic acid coefficient, and because we can put into the hands of those who have to give advice on this matter what we believe to be the truest means of obtaining the information on which they are expected to act.

We consider that the advantage of our modified Rideal-Walker test is that not only the *same highly skilled worker*, but *moderately skilled and careful workers* may obtain similar results time after time. A very casual study of one or two of the papers read at the recent International Congress of Applied Chemistry will bring out the importance of this. Our modifications are objected to on the score that they complicate the method and some of our critics speak of "elaborate machinery" and "vast numbers of tubes," and ask whether "complications of a simple process are of real advantage." Our reply is that we have not used elaborate machinery and have brought accuracy to places where it was lacking.

The records of the Chemical Congress offer evidence that others who have used the Rideal-Walker method have not always met with complete success. Each of our charts carries its own credentials. That our method is fairly simple and uncomplicated may be gathered from the fact that a medical man who has been in one of the Services for a long time, who has had no special training in bacteriology beyond a three months' course ten years ago, volunteered to help us in the continuation of our work and at his fifth experiment obtained a quite regular chart. We have no doubt that other methods in the hands of a skilled worker, constantly in practice, may prove reliable, but at the above-mentioned Congress it was stated that three observers, all of them "skilled," obtained results that can scarcely be called satisfactory. In further confirmation of our contention that different observers, working with the Rideal-Walker method, do not agree in their results, we draw attention to the carefully compiled table given by Major C. E. P. Fowler in the *Journal of the Royal Army Medical Corps*, 1907, vol. ix., pp. 54–58. Major Fowler's own coefficient figures, taken as a whole, though usually somewhat higher than ours, certainly appear to confirm the accuracy of our comparative results. That such different results can be obtained is, we hold, evidence against the general reliablity of any method. The Martin-Chick method is, no doubt, very accurate, and for the conduct of certain kinds of work is essential, but for it to be successfully carried out a very large amount of skilled assistance is required. For the purpose of obtaining such curves as we desired it would not be sufficiently comprehensive. One of our critics writes: "Moreover, the tubes do not show any improvement through using a spoon instead of a loop. To inoculate 12 tests in 2½ minutes with proper mixing must demand great skill whatever apparatus be used." Had we not used the spoons we might no doubt have made a similar statement and we do not quarrel with anyone for being a little incredulous on this point. We do object, however, to the ignoring in the first part of the statement the undeniable advantage of obtaining in one experiment so many additional data on which to calculate results; whilst as to the second part, we can only quote the old Scotch saying that "the proof o' the puddin's in the preein' o't."

It is objected that in using the second factor for our coefficient half an hour is too long a period during which to allow the disinfectant to act. May we point out in answer to this that with a complete carbolic acid curve the carbolic acid coefficient for any disinfectant may be calculated at any point from 2½ minutes to 30 minutes by those who do not approve of the "mean" coefficient we have provided.

In support of our contention that the bacillus coli communis has a "resistance" corresponding closely to that of bacillus typhosus, may we draw attention to Tables II. (one of our three typical Rideal-Walker charts) and X. of our report, in which it will be seen that with Cyllin, taking that as an example, we obtained a carbolic acid coefficient of 8·7, by the Rideal-Walker method, for the bacillus typhosus, and of 8·8 by the method as modified. Moreover, if we take the 7½ minute and the 10 minute results obtained by our method and compare them with the figure obtained by the Rideal-Walker method, using the data of our carbolic acid table (Table III.) we obtain the coefficient for Cyllin of 8·75 as the mean between the 7½ and 10 minutes coefficients with B. coli communis.

In thus meeting this criticism we are not wishing to "score a point," we are simply desirous of setting forth an alternative view. Again, one of the critics writes: "I have contended all along that these tests to be of any value must be done by a trained chemist and that many of the errors and disputes in the past have arisen through carelessness or want of skill on the part of the investigator." We should go beyond this and say that to obtain successful results by that test not only chemical training and great technical skill but some knowledge of bacteriological methods and problems are necessary. He continues: "It is, however, very astonishing that the Commissioners themselves admit the fact that they could only get three out of eleven consecutive tests; the conclusion is an obvious one, and it makes it possible for me to challenge their statements that no fluid on the market has a higher Rideal-Walker figure than 13. Apart from my own work there must be thousands of tests now recorded throughout the world showing that for some years Cyllin, and now other, manufactures have regularly been on the market with a Rideal-Walker figure much higher than that named." We would point out in all good humour that if the "obvious conclusion" referred to is that we admit a lack of technical skill in not obtaining a definite result there are only two alternatives—either THE LANCET Commissioners must be singularly incompetent not to be able to obtain better results after the considerable amount of practice they have had, or, the test demanding the technical skill, chemical and bacteriological knowledge, and general expert ability of what Mr. Bernard Shaw might call a "super man," it is not one to be utilised by the medical officer of health or one that can be of any great value to the average laboratory worker who cannot keep up continuous practice, and who has not the opportunity of calling in at a moment's notice the assistance of an expert. We anticipate that with our modification the method will be applied far more generally and by the worker of average skill. Our exact words are: "The bacteriological results are so consistent throughout that we have little hesitation in putting them forward as affording an accurate indication of the germicidal power of disinfectants we have tested. We are fully satisfied on this point although in our investigation we have not found such high coefficient figures as have been given by other observers. Neither with the Rideal-Walker method nor with the modification we have made use of have we *under any conditions* obtained (any) carbolic acid coefficient figure higher than 13." This surely can refer only to the disinfectants on which we are reporting and concerning which all data are given. It is because such higher figures have been given by the "many observers" that we feel justified in doubting the accuracy not only of these but of some other figures, and in laying such marked stress on this point.

Moreover, with regard to the statement that our coefficients as a whole are *too low* we may point out that one of our critics offers the following: "Broth is a more delicate test for the recovery of the organism than is bile salt medium. I have had no opportunity of using the spoons, but think that in some cases a quantity of disinfectant sufficient to inhibit growth in the MacConkey tube might be introduced." Surely, even casual consideration will show that if such be the case our coefficients are *unduly high*, since the lethal

dilutions used in our carbolic acid control appear to correspond closely with those generally made use of in Rideal-Walker tests.

Some play is made with the fact that there is a difference between certain coefficient figures published in the *Journal of Pathology* and those given in THE LANCET report. In both the instances quoted the figures vary in the same direction. In THE LANCET we refer to the fact that in our original calculations the control phenol was worked out as being unduly weak. Later this error was corrected after a series of special tests had been made. The whole of our series of disinfectants then showed a slightly higher coefficient figure.

We ask our critics to read carefully everything from "Table XIV." of THE LANCET Report to the last word of the column in which it appears. We rely on the figures included in that table as containing sufficient answer to any criticism hitherto offered on this point.

In the *Journal of Pathology* we were simply calling attention to our method and the disinfectants were unnamed. In THE LANCET the corrected coefficient figures are given. In our earlier experiments we kept our carbolic acid dilutions and emulsions, as recommended for the Rideal-Walker method, 24 hours after we had prepared them before we tested them. Although we make the statement that we obtained certain results with carbolic acid kept in solution for 24 hours, we had realised that what is spoken of as a "fall" might be nothing more than an experimental error. In any case, the "24 hour phenol" appeared to have no advantages over freshly dissolved phenol and we say "apparently, also, the phenol loses very little of its bacteriological power, but we considered that this was sufficient to compel us to use freshly made solutions for each experiment." In a case of this kind where experimental error may come in, but where there might be something beyond such experimental error, we determined to get rid of those sources of error, at any rate, that were avoidable.

Some of the statements made and suggestions offered appear to us to assume an *ex-parte* form rather than one of genuine criticism of our work, and we feel that were we to attempt to answer them all we should be led into a loose and wordy controversy on which we have no intention of embarking.

We are accused of making our observations "upon old and superseded preparations." All the results published were obtained with samples bought on the open market just before the tests were made. It is at least regrettable that the stronger samples referred to were not universally distributed. Concerning one of the preparations it is stated that "its germicidal value is, I believe, considerably higher than that expressed in THE LANCET report." Naturally, full credit must be given for this belief, which, however, from the results of our own experiments, we feel justified in looking upon as being not entirely unbiassed.

The germicidal factor must always remain the basis of these tests, and however great and prolonged the "revolt against the autocracy of the microbe" may be, some kind of a "revolt" will still have to be carried on so long as the microbe remains alive. Sanitas Disinfecting Fluid was originally included in our list because it was advertised and recommended in the directions on the bottle to be used as, among other things, an effective germicide. We made an obvious slip in Table XXIV., where Sanitas Disinfecting Fluid was classed as a coal-tar disinfectant forming a clear solution with water. This slip, which we much regret, we corrected at once, and omitted any reference to the fluid from our table of comparative prices. We agree that it is absolutely impossible to determine the relative values of various disinfectants by any one test, but we claim that anything that will give information on the subject of disinfection is called for in the public interest and in the service of municipal authorities.

We claim no "inside" knowledge of any of the disinfectants we have tested. We have approached the question entirely from the standpoint of outside observers who wish to obtain knowledge ultimately to be applied to practical disinfection. It is a matter of indifference to us which disinfectant gives the best results, but it is equally a matter of importance that we should, so far as possible, accumulate facts. Where we have not been able to obtain these facts we have reserved our opinion.

We entered upon this investigation with an unbiassed mind, and we think we have succeeded in preserving that attitude. We cannot be blind to the tinge of acrimony that has characterised much of the inter-disinfectant controversy, and we wish to avoid anything of the kind in connexion with our present work. We have considered it necessary to answer our critics because we believe that each one is desirous of helping us to obtain definite facts bearing on a very important question. Having done so we intend to leave the discussion to others until we have more facts to communicate. Certain of the points that we raise in our report are receiving further attention, and as soon as we have any reliable data to communicate they shall be placed in the hands of those interested. In the meantime we shall welcome any assistance that may be placed at our disposal by those who have knowledge that we do not possess, knowledge which they may feel justified in communicating to, or anxious to place before, us.

THE FEEDING OF NECESSITOUS LONDON SCHOOL CHILDREN.

AS reported in THE LANCET of Nov. 27th, p. 1640, the Education Committee of the London County Council has asked for a supplemental estimate of £25,000 to meet the cost of feeding necessitous school children during the period ending March 31st, 1910. The Finance Committee, however, reporting to the Council on Dec. 14th, advised that only £15,000 of the estimate should be sanctioned until the Council has fully considered the way in which the Provision of Meals Act is being administered in London. They were advised that from Oct. 1st, 1909, to March 31st, 1910, there would be provided 5,074,300 meals costing 1½*d.* per meal, or £31,714 *plus* £5286 for service. The total estimate for the year was £62,265. This, however, did not represent the whole cost of the provision of meals, for it included nothing in respect of establishment charges, whereas the organisation had thrown a very heavy burden upon the education department. The committee thought the Council should be informed of the total cost of administering the Education (Provision of Meals) Act, 1906, and they were obtaining the information. The tendency to provide free meals, especially out of the rates, was undoubtedly to induce an increasing number of parents to obtain free meals for their children, and it was of the utmost importance in the interests of the ratepayers that there should be careful discrimination between cases which were, and those which were not, necessitous. The committee had inquired into the existing arrangements for recovering the cost from parents. The scheme approved by the Council was not yet fully in operation, but the school care committees were being formed. It was therefore too early to form a definite opinion as to the effectiveness of the procedure decided upon. The total number of free meals supplied in 1908–09, whether out of rates or voluntary funds, was 4,546,771. The original estimate for the current financial year was 6,000,000, and this number was now increased to 7,702,506. No reason was given by the Education Committee for the enormous increase of 3,255,000, or 70 per cent., over last year's figures. It appeared to point to the failure of the present procedure to effect the desired object of securing that only really necessitous children should be fed at the expense of the rates. The Finance Committee had therefore asked the Education Committee to reconsider their methods and to give the Council full information as to the nature of the tests and safeguards upon which they proposed to rely for restricting the giving of meals to really necessitous children. It was obvious that unless great care and scrutiny were exercised the number of free meals would continue to grow, and it was difficult to see what the limit (other than the statutory one of a halfpenny rate) would be.

The amount included in the annual estimates as likely to be received from parents in repayment of the cost of food

was £1000, but for the six months to Oct. 31st, 1909, the sums actually recovered amounted to only £26. This was entirely unsatisfactory, and called for careful consideration. The Finance Committee criticised the terms of the circular letter sent to parents as soon as their children had been fed by the Council. The letter quoted the emphatic words of the Act that parents "shall" be charged with the cost of food when they can pay, and then, after giving particulars of the cost of meals, added, "These facts are told you in order that you may pay if you can." In the opinion of the committee the letter appeared to convey an impression in conflict with the Act. This procedure was not calculated to result in the recovery of the amount which the Act contemplated should be recovered, and it should be revised. They had pointed out on more than one occasion that the principle upon which the Education Committee should act in respect of the recovery from parents of the cost, not only of feeding but also of medical treatment, was that repayment should be the rule, exception being made only in cases where it was proved that the parents could not contribute. They had asked the Education Committee to strengthen their administration in this matter, and also to modify the circular letter. The sum of £15,000 would suffice until the middle of February, when they would submit a further report.

The report was received without discussion. On Dec. 15th the Education Committee decided to ask the London boards of guardians to make monetary allowances to the Council in respect of meals given to children whose parents are in receipt of out-relief, in order to avoid overlapping. It was pointed out that a similar difficulty will have to be met in respect of medical treatment.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Dec. 17th, 1831.

THE CHOLERA IN THE NORTH OF ENGLAND.

AT the moment of our going to press we have received a letter from a physician at Sunderland, on the subject of the disease prevailing in that town, under the name of "The Cholera,"—the *Blue Cholera of India*, as we have for some time designated the desolating pestilence which has commenced its scourges in the North of England.

* * * * * * * * *

(Excerpt of the letter mentioned above.)

Accompanied by Mr. Kennedy, the distinguished writer of the excellent book which has so deservedly elicited your praises, I this day went to visit a woman named *Henry*, who had been attacked with the disease in a severe form about twenty-four hours previously. We tracked our way through a dirty lane near the barracks, ascended a tottering *escalier*, and found ourselves in a small, though not uncomfortable, apartment. On the bed lay the expiring woman, apparently aged at least 70 years, and presenting a shape and attitude of death, which, although accustomed as I am to its most variegated shapes, I never saw paralleled in terror. But I close the curtain on this patient, and turn to a more instructive object. On the floor, before the fireplace, extended on a palliasse, covered with a solitary blanket, and surrounded by a group of female friends, lay a girl of slender make and juvenile height, but with the face of a superannuated hag. She uttered no moan, gave expression of no pain, but she languidly flung herself from side to side, and from the supine to the prone position. The colour of her countenance was that of lead—a silver blue, ghastly tint; her eyes were sunk deep into the sockets, as though they had been driven in an inch behind their natural position; her mouth was squared; her features flattened; her eyelids black; her fingers shrunk, bent, and inky in their hue. All pulse was gone at the wrist, and a tenacious sweat moistened her bosom. In short, Sir, that face and form I never can forget, were I to live beyond the period of man's natural age. She had vomited some whitish watery matter at few and distant intervals, and had had *a few insignificant dejections* of the same kind.

I appeal to Mr. Kell, the surgeon of the 82nd, to Dr. Reid Clanny, to Mr. Kennedy, to Dr. Morreis, and to numerous others who have seen this case, to say whether I have not understated, rather than exaggerated, its features. And, secondly, I appeal to any practitioner in existence, whose mind is not warped by prejudice, and the expression of whose opinions is not restricted by former declarations, whether he has ever seen a case of *our* cholera corresponding to that description. Would to God I could bring the sceptics here, and show them the girl Henry! And if they can confound the exhaustion on the essential vomiting and purging of English cholera, with the sudden, deadly, overwhelming, collapse, the *living death*—to use an apparent paradox—of the unhappy being who will probably have perished before my letter closes—if, I repeat, they can confound these symptoms (and I speak but of symptoms, for it is on them they exclusively dwell), I shall, to use the words of an ingenious writer in your Journal on the other side of this question—"For ever after follow the philosophy of the man who doubted his own existence."

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 7613 births and 5238 deaths were registered during the week ending Dec. 11th. The annual rate of mortality in these towns, which had steadily increased during the six preceding weeks from 12·0 to 16·5 per 1000, further rose to 16·6 in the week under notice, and exceeded the rate recorded in any week since the middle of April last. During the first ten weeks of the current quarter the annual death-rate in these towns averaged 14·0 per 1000, and in London the mean rate during the same period was equal to 13·8. The lowest annual rates of mortality recorded in the 76 towns last week were 6·4 in King's Norton, 7·1 in Hornsey, and 8·2 in Handsworth and Smethwick, all being suburban districts; the rates in the other towns ranged upwards, however, to 23·0 in Wigan, 24·4 in Ipswich, 24·8 in Barrow-in-Furness, and 25·4 in Coventry. In London the recorded death-rate last week was equal to 16·6 per 1000. The 5238 deaths registered in the 76 towns last week showed a further increase of 42 upon the numbers returned in the six preceding weeks, and included 246 which were referred to the principal epidemic diseases, against 278 and 297 in the two preceding weeks; of these 246 deaths, 67 resulted from whooping-cough, 47 from measles, 47 from diphtheria, 46 from diarrhœa, 22 from scarlet fever, and 17 from "fever" (principally enteric), but not one from small-pox. The annual rate of mortality from these epidemic diseases, which had been equal to 0·9 per 1000 in each of the three preceding weeks, declined last week to 0·8. No death from any of these epidemic diseases was registered last week in Leicester, Croydon, East Ham, Oldham, or in 14 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3·0 in Birkenhead, 3·2 in Swansea, 4·1 in Barrow-in-Furness, and 4·2 in Ipswich. The 67 deaths from whooping-cough in the 76 towns showed a further slight increase upon the numbers returned in the two preceding weeks, and caused annual rates equal to 1·3 per 1000 in Sunderland and in Merthyr Tydfil, 1·4 in Ipswich, and 1·7 in Barrow-in-Furness. The 47 fatal cases of measles were fewer by 6 than the number in the previous week; the highest annual rates from this disease last week were 1·1 in Swansea, 1·3 in Birkenhead, 1·6 in Northampton, and 2·1 in Ipswich. The deaths referred to diphtheria, which had been 58 and 48 in the two previous weeks, declined to 47 last week, of which 18 occurred in London and its suburban districts, 3 in Bristol and 5 in Manchester and Salford. The 46 deaths attributed to diarrhœa showed a considerable further decline from the numbers in recent weeks, but caused proportionally excessive rates in Merthyr Tydfil, Rhondda, and Barrow-in-Furness. The fatal cases of scarlet fever, which had been 41 in each of the two preceding weeks, declined to 22 last week, of which 3 occurred in Liverpool and Bootle, 2 in Manchester and Salford, and 2 in Rhondda. The 17 deaths referred to "fever," of which 3 occurred in Manchester, showed a decline of 15 from the number in the previous week. The number of scarlet fever patients under treatment in the Metropolitan Asylums and London Fever

Hospitals, which had declined during the eight preceding weeks from 2810 to 2488, had further fallen to 2475 on Saturday last; 266 new cases of this disease were admitted to these hospitals during last week, against 264 and 281 in the two preceding weeks. The Metropolitan Asylums Hospitals contained 3 cases of small-pox on Saturday last. Of the 1540 deaths registered in London last week, 417 were referred to pneumonia and other diseases of the respiratory system, against numbers increasing from 167 to 432 in the eight preceding weeks; these 417 deaths exceeded by 45 the corrected average number in the corresponding week of the five years 1904–08. The causes of 47, or 0·9 per cent., of the deaths registered last week in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered last week were duly certified in Leeds, Bristol, West Ham, Newcastle-on-Tyne, Leicester, Portsmouth, and in 47 smaller towns; the 47 uncertified causes of death in the 76 towns last week included 7 in Liverpool, 3 in Bootle, 3 in London, and 4 in Manchester and Salford.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 790 births and 851 deaths were registered during the week ending Dec. 11th. The annual rate of mortality in these towns, which had been equal to 24·2 and 22·3 per 1000 in the two preceding weeks, rose again to 23·8 in the week under notice. During the first ten weeks of the current quarter the annual death-rate in these Scotch towns averaged 17·2 per 1000, and exceeded by 3·2 the mean rate during the same period in the 76 largest English towns. The annual death-rates last week in these Scotch towns ranged from 12·3 and 15·2 in Greenock and Leith, to 19·8 in Perth and 31·7 in Glasgow. The 851 deaths from all causes in the eight towns last week showed an increase of 54 on the number in the previous week, and included 121 which were referred to the principal epidemic diseases, against 98 and 88 in the two preceding weeks. These 121 deaths were equal to an annual rate of 3·4 per 1000; the mean rate from the same diseases last week in the 76 English towns did not exceed 0·8 per 1000. The 121 deaths from these diseases in the Scotch towns last week included 64 from measles, 16 from whooping-cough, 14 from diphtheria, 11 from diarrhœa, 8 from scarlet fever, and 8 from "fever," but not one from small-pox. The fatal cases of measles, which had been 36, 49, and 43 in the three preceding weeks, rose to 64 last week, of which 60 occurred in Glasgow and 4 in Edinburgh. The 16 deaths from whooping-cough were within one of the number in the previous week, and included 7 in Glasgow, 3 in Edinburgh and in Dundee, and 2 in Aberdeen. The deaths referred to diphtheria, which had been 13 and 4 in the two previous weeks, rose to 14 last week, of which 8 were returned in Glasgow and 2 both in Edinburgh and in Paisley. The 11 deaths attributed to diarrhœa corresponded with the number in the previous week, and included 9 in Glasgow. Of the 8 fatal cases of scarlet fever, 4 occurred both in Glasgow and Edinburgh; and 7 of the 8 deaths referred to "fever," were returned in Glasgow, and were all certified as enteric. The deaths referred to diseases of the respiratory system in the eight towns, which had been 298 and 265 in the two preceding weeks, rose again to 275 last week, and exceeded by 160 the number registered in the corresponding week of last year. The causes of 36, or 4·2 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,142,308 persons, 532 births and 508 deaths were registered during the week ending Dec. 11th. The mean annual rate of mortality in these towns, which had been equal to 21·0 and 20·1 per 1000 in the two preceding weeks, rose to 23·2 in the week under notice. During the first ten weeks of the current quarter the annual death-rate in these Irish towns averaged 18·2 per 1000, whereas the mean rate during the same period did not exceed 14·0 in the 76 largest English towns, and 17·2 in the eight principal Scotch towns. The annual death-rate last week was equal to 22·0 in Dublin, 29·4 in Belfast, 18·5 in Cork, 19·3 in Londonderry, 17·8 in Limerick, and 11·7 in Waterford; the mean rate last week in the 16 smallest of the Irish town districts was equal to 18·6 per 1000. The 508 deaths from all causes in the 22 town districts last week showed an increase of 67 upon the number returned in the previous week, and included 31 which were referred to the principal epidemic diseases, against 18, 21, and 22 in the three preceding weeks; these 31 deaths were equal to an annual rate of 1·4 per 1000; in the 76 English towns the mean rate from the same diseases last week did not exceed 0·8, but in the eight principal Scotch towns it was as high as 3·4 per 1000. The 31 deaths from these epidemic diseases in the Irish towns last week included 19 from whooping-cough, 8 from diarrhœa, 2 from "fever," and one each from measles and scarlet fever, but not one either from diphtheria or small-pox. The 19 fatal cases of whooping-cough showed a further increase of 9 upon the numbers in recent weeks, and included 15 in Belfast and 2 in Dublin. The 8 deaths attributed to diarrhœa corresponded with the number in the previous week; 4 occurred in Dublin and 2 both in Belfast and Cork. Of the 2 deaths referred to enteric fever, 1 each occurred in Dublin and Belfast; and the fatal case both of measles and scarlet fever were returned in Dublin. The deaths in the 22 towns referred to pneumonia and other diseases of the respiratory system, which had been 101 and 157 in the two preceding weeks, further rose last week to 162. The causes of 25, or 4·9 per cent., of the deaths registered last week in the Irish towns were not certified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent., while in the Scotch towns it was equal to 4·2 per cent.

VITAL STATISTICS OF LONDON DURING NOVEMBER, 1909.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 5·8 per 1000 of the population, estimated at 4,833,938 persons in the middle of the year; in the three preceding months the rates were 5·0, 7·1, and 6·5 per 1000 respectively. The lowest rates last month were recorded in Chelsea, the City of Westminster, Stoke Newington, Holborn, and Finsbury; and the highest rates in Fulham, Bermondsey, Battersea, Lewisham, and Woolwich. Six cases of small-pox, of which 5 belonged to Stepney and 1 to the City of London, were notified during last month, and 4 small-pox cases remained under treatment in the Metropolitan Asylums Hospitals at the end of the month. The prevalence of scarlet fever showed a further marked decline last month; among the several metropolitan boroughs this disease was proportionally most prevalent in Fulham, Bermondsey, Battersea, Camberwell, Lewisham, and Woolwich. The Metropolitan Asylums Hospitals contained 2460 scarlet fever patients at the end of last month, against 2329, 2717, and 2708 at the end of the three preceding months; the weekly admissions averaged 289, against 274, 394, and 325 in the three preceding months. Diphtheria also was less prevalent than in either of the two preceding months; this disease was proportionally most prevalent in Paddington, Fulham, Hammersmith, Stepney, and Lewisham. There were 940 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 795, 901, and 958 at the end of the three preceding months; the weekly admissions averaged 104, against 119 in each of the two preceding months. The prevalence of enteric fever during November showed no numerical variation from that recorded in the preceding month; among the several boroughs this disease was proportionally most prevalent last month in Kensington, St. Pancras, Bethnal Green, Stepney, Poplar, and Battersea. The number of enteric fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 75 and 78 at the end of the two preceding months, had declined again to 70 at the end of last month; the weekly admissions averaged 10, against 13 and 11 in the two preceding months. Erysipelas was proportionally most prevalent in Hackney, Finsbury, the

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING NOVEMBER, 1909.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1909.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.											Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,833,938	6	1216	459	—	84	—	29	352	3	2149	5·8	—	37	24	51	73	—	10	—	86	281	0·8	5131	13·8	118
West Districts.																										
Paddington	151,955	—	41	25	—	1	—	—	11	—	78	6·7	—	2	1	2	2	—	—	—	5	12	1·0	132	11·3	142
Kensington	183,683	—	29	11	—	9	—	1	7	—	57	4·0	—	—	2	—	—	—	—	—	—	2	0·1	166	11·8	88
Hammersmith	125,704	—	18	16	—	—	—	3	5	—	42	4·4	—	1	—	3	2	—	—	—	5	11	1·1	154	16·0	184
Fulham	176,406	—	54	26	—	4	—	4	7	—	95	7·0	—	—	3	4	2	—	—	—	5	14	1·0	176	13·0	149
Chelsea	75,249	—	7	8	—	—	—	—	4	—	19	3·3	—	—	—	—	2	—	—	—	—	2	0·3	95	16·6	189
City of Westminster	168,883	—	31	7	—	3	—	—	2	1	44	3·4	—	—	—	2	—	—	1	—	1	4	0·3	180	13·9	122
North Districts.																										
St. Marylebone	126,027	—	29	8	—	—	—	—	11	—	48	5·0	—	—	1	1	3	—	—	—	1	6	0·6	142	14·7	87
Hampstead	94,185	—	19	4	—	—	—	1	5	—	29	4·0	—	—	—	—	—	—	—	—	1	1	0·1	63	8·7	60
St. Pancras	237,422	—	64	24	—	10	—	1	14	—	113	6·2	—	1	2	2	3	—	1	—	1	10	0·5	258	14·2	107
Islington	351,202	—	94	34	—	4	—	—	15	2	149	5·5	—	1	1	3	3	—	—	—	2	10	0·4	381	14·1	101
Stoke Newington	54,423	—	7	1	—	—	—	—	2	—	10	2·4	—	—	—	1	—	—	—	—	—	1	0·2	33	7·9	35
Hackney	237,601	—	58	22	—	3	—	—	34	—	117	6·4	—	4	1	1	1	—	1	—	1	9	0·5	222	12·2	88
Central Districts.																										
Holborn	53,802	—	5	3	—	1	—	—	—	—	9	2·2	—	—	—	1	—	—	—	—	1	2	0·5	62	15·0	52
Finsbury	96,289	—	6	6	—	—	—	2	10	—	24	3·3	—	1	1	—	1	—	—	—	5	8	1·1	134	18·3	103
City of London	18,193	1	2	—	—	—	—	—	2	—	5	3·6	—	1	—	—	2	—	—	—	—	3	2·1	26	18·6	176
East Districts.																										
Shoreditch	114,802	—	17	5	—	—	—	—	11	—	33	3·7	—	2	—	—	1	—	—	—	5	8	0·9	140	15·9	167
Bethnal Green	131,316	—	39	12	—	3	—	—	14	—	68	6·8	—	4	1	3	—	—	—	—	4	12	1·2	166	16·5	151
Stepney	312,525	5	46	41	—	18	—	3	52	—	165	6·9	—	13	3	4	9	—	1	—	8	38	1·6	380	15·8	128
Poplar	171,965	—	39	13	—	5	—	2	19	—	78	5·9	—	3	1	1	10	—	1	—	5	21	1·6	206	15·6	128
South Districts.																										
Southwark	211,125	—	33	17	—	3	—	—	19	—	72	4·4	—	1	—	3	5	—	2	—	6	17	1·0	257	15·9	124
Bermondsey	127,569	—	48	6	—	2	—	2	14	—	72	7·4	—	—	1	—	3	—	—	—	3	7	0·7	172	17·6	108
Lambeth	324,188	—	97	28	—	6	—	1	14	—	146	5·9	—	—	1	5	4	—	—	—	6	16	0·6	317	12·7	103
Battersea	186,036	—	68	20	—	6	—	1	10	—	105	7·4	—	1	1	3	2	—	—	—	3	10	0·7	196	13·7	148
Wandsworth	297,646	—	57	19	—	—	—	5	18	—	99	4·3	—	—	—	—	6	—	—	—	3	9	0·4	259	11·3	94
Camberwell	283,022	—	98	31	—	2	—	—	18	—	149	6·9	—	—	1	5	3	—	—	—	7	16	0·7	303	14·0	122
Deptford	118,583	—	29	13	—	2	—	—	14	—	58	6·4	—	2	1	3	4	—	2	—	2	14	1·5	135	14·8	129
Greenwich	111,014	—	17	9	—	1	—	1	3	—	31	3·6	—	—	—	1	2	—	1	—	1	5	0·6	98	11·5	133
Lewisham	160,749	—	107	36	—	—	—	—	11	—	154	12·5	—	—	1	2	—	—	—	—	1	4	0·3	139	11·3	63
Woolwich	133,374	—	57	14	—	1	—	2	6	—	80	7·8	—	—	1	1	3	—	—	—	4	9	0·9	139	13·6	146
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

City of London, Bethnal Green, Stepney, Poplar, Bermondsey, and Deptford. The 29 cases of puerperal fever notified during the month included 5 in Wandsworth, 4 in Fulham, 3 in Hammersmith and in Stepney, and 2 each in Finsbury, Poplar, Bermondsey, and Woolwich. Of the 3 cases notified as cerebro-spinal meningitis 2 belonged to Islington and 1 to the City of Westminster.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ending Nov. 27th the deaths of 5131 London residents were registered, equal to an annual rate of 13·8 per 1000; in the three preceding months the rates were 10·5, 11·5, and 11·3 per 1000. The death-rates last month ranged from 7·9 in Stoke Newington, 8·7 in Hampstead, 11·3 in Paddington, in Wandsworth, and in Lewisham, and 11·5 in Greenwich, to 16·0 in Hammersmith, 16·5 in Chelsea and in Bethnal Green, 17·6 in Bermondsey, 18·3 in Finsbury, and 18·6 in the City of London. The 5131 deaths from all causes included 281 which were referred to the principal infectious diseases; of these, 37 resulted from measles, 24 from scarlet fever, 51 from diphtheria, 73 from whooping-cough, 10 from enteric fever, and 86 from diarrhœa, but not any from small-pox, from typhus fever, or from ill-defined pyrexia. The lowest death-rates from these diseases last month were recorded in Kensington, Chelsea, the City of Westminster, Hampstead, Stoke Newington, and Lewisham; and the highest rates in the City of London, Hammersmith, Finsbury, Bethnal Green, Stepney, Poplar, and Deptford. The 37 fatal cases of measles showed a decline of 70 from the corrected average number in the corresponding period of the five preceding years; the greatest proportional mortality from this disease was recorded in Paddington, Hackney, Shoreditch, Stepney, Poplar, and Deptford. The 24 deaths from scarlet fever were equal to one-half the corrected average number; this disease was proportionally most fatal in Kensington, Fulham, St. Pancras, and Stepney. The 51 fatal cases of diphtheria showed a decline of 16 from the average number in the corresponding period of the five preceding years; the highest death-rates from this disease were recorded in Hammersmith, Fulham, Bethnal Green, Lambeth, Battersea, Camberwell and Deptford. The 73 deaths from whooping-cough were 26 in excess of the corrected average number; the greatest proportional mortality from this disease was recorded in Chelsea, St. Marylebone, the City of London, Stepney, Poplar, Southwark, and Deptford. The 10 deaths referred to enteric fever were 15 below the corrected average number; of these 10 deaths, 2 belonged to Southwark, 2 to Deptford, and 1 each to Westminster, St. Pancras, Hackney, Stepney, Poplar, and Greenwich. The 86 fatal cases of diarrhœa were 41 fewer than the corrected average number; this disease was proportionally most fatal in Paddington, Hammersmith, Finsbury, Shoreditch, Bethnal Green, and Woolwich. In conclusion, it may be stated that the aggregate mortality in London last month from these principal infectious diseases was 33 per cent. below the average.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 118 per 1000. The lowest rates of infant mortality were recorded in Kensington, St. Marylebone, Hampstead, Stoke Newington, Hackney, Holborn, and Lewisham; and the highest rates in Hammersmith, Chelsea, the City of London, Shoreditch, and Bethnal Green.

HEALTH EXHIBITION IN CONNEXION WITH THE CONGRESS OF THE ROYAL SANITARY INSTITUTE.—An exhibition will be held in connexion with the twenty-fifth congress of the Royal Sanitary Institute from Sept. 5th to 14th, 1910, in the Pavilion at Brighton. The exhibition will be divided into four divisions—namely, (1) Science in Relation to Hygiene; (2) Hygiene of Trades and Professions; (3) Construction and Sanitary Apparatus; and (4) Personal and Domestic Hygiene. Full particulars will be supplied on application to the secretary, Parkes Museum, 90, Buckingham Palace-road, London, S.W. The Brighton town council has appointed a subcommittee to make the necessary arrangements for the Congress. It is proposed to call a public meeting of the inhabitants about the end of February.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Surgeon Charles Kendal Bushe has been promoted to the rank of Staff-Surgeon in His Majesty's Fleet (dated Dec. 9th, 1909).

The following appointments are notified:—Fleet-Surgeons: O. W. Andrews to the *Prince George* on commissioning and H. E. Tomlinson to the *Acheron*. Surgeons: H. D. Drennan to the *Hermes*, additional, for the *Odin* and on commissioning; G. D. Bateman to the *Mercury*, additional, for the *Hazard*; G. A. Bradshaw to the *Formidable*; E. L. Atkinson to the *Pembroke*, additional, for disposal; W. Miller to the *Achilles*; T. Creaser to the *Victory*, additional for the *Canopus*, on paying off.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Robert D. Hodson is placed on retired pay (dated Dec. 14th, 1909).

The under-mentioned officers, on transfer from the 8th (Lucknow) Division, have been appointed specialists in the subjects named:—Lieutenant C. H. Denyer, 5th (Mhow) Division, dermatology; Captain P. S. O'Reilly, 9th (Secunderabad) Division, ophthalmology. Major G. W. Tate, M.B., from Dundalk, has been appointed Recruiting Medical Officer at Dublin.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel R. J. Baker, Bombay, is permitted to retire from the Service. Lieutenant-Colonel A. T. Brown, Bengal, is permitted to retire from Dec. 14th. Captain Norman and Captain White, members of the Plague Research Commission, have arrived at Madras to inquire into the question why Madras and the East Coast generally remained practically free from plague. It is understood that Captain White will be occupied on this work for three or four months. Captain H. S. Matson, Brigade Laboratory, Jhansi, has been appointed specialist in the prevention of disease from Sept. 20th. Captain Lloyd has been appointed acting professor of biology, Calcutta Medical College. Lieutenant E. B. Munro, 62nd Punjabis, has been directed to proceed to Cawnpore for officiating medical charge of the 41st Dogras.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Supplementary List: William Hilgrove Leslie McCarthy to be Lieutenant (on probation) (dated Nov. 17th, 1909).

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st West Lancashire Field Ambulance: Arthur John Evans (late Surgeon, Royal Naval Volunteer Reserve) to be Captain (dated Dec. 15th, 1909).

For attachment to Units other than Medical Units.—Dudley William Carmalt Jones to be Lieutenant (dated Oct. 26th, 1909). Joseph Hollins Donnell to be Lieutenant (dated Nov. 5th, 1909).

THE ARMY MEDICAL ADVISORY BOARD.

The Army Council has approved of the appointments of the undermentioned gentlemen as members of the Army Medical Advisory Board being renewed for a period of three years: Dr. J. Rose Bradford, Sir C. Cameron, Dr. L. C. Parkes, Dr. M. S. Pembrey, and Sir F. Treves.

DEATHS IN THE SERVICES.

Deputy Inspector-General Horace Edward Firmin Cross, R.N., on Dec. 13th, at Tangley Park, Worplesdon, Surrey, aged 60 years. He joined the Royal Navy as a surgeon in March, 1877, and served in the *Orontes* during the campaign against the Zulus in South Africa in 1877–79 (Zulu medal). He was the surgeon of the *Temeraire* at the bombardment of Alexandria, July 11th, 1882 (Egyptian medal, with clasp for Alexandria and the Khedive's bronze star). He served with the Royal Marine Battalion during the operations in the Eastern Soudan in 1884 and was present at the actions of El Teb and Tamaai (mentioned in despatches and promoted). In 1892 he was made a fleet-surgeon, and in 1899 a deputy inspector of hospitals and fleets on retirement.

Correspondence.

"Audi alteram partem."

THE PLEA OF LUNACY IN THE CRIMINAL COURTS OF SCOTLAND.

To the Editor of THE LANCET.

SIR,—May I as one engaged in the administration of criminal law in Scotland be allowed to follow up the excellent paper by Professor J. Glaister which appears in your issue of Nov. 13th? He points out some anomalies which have recently emerged, and as the broader question of lunacy administration is likely soon to be taken up by the legislature discussion may be of value.

The first anomaly is that created by the strict reading of the statutes in Brown's case (the case of poisoned shortbread). As Professor Glaister and you in your comments on his article point out, it is not satisfactory that the jury, after having heard not only the evidence as to insanity but also the evidence put forward to establish guilt, should have been barred from considering this latter evidence and from giving a decision on it, by the judge's direction that they should first of all decide whether the accused was at the time of his trial insane in the sense of being unfit to instruct a defence. One would have expected that the jury would have been told that if, having heard the evidence, they did not feel bound to convict they must acquit; that if, however, they could not acquit, then, and not till then, and before convicting, they should ask themselves whether they were satisfied that the accused was in a fit state to instruct his defence. If the evidence is not conclusive against a prisoner either because it is inherently weak or because the defence, however instructed, has been too much for it, what relevance has the question—in many cases an abstract and debateable one—as to whether or not the accused could instruct a defence? Either he has been actually able to do so or it has not been necessary for him to do so. It follows that, assuming the statutes were correctly interpreted, an amendment of them is needed in the interests of fairness.

The question is raised as to whether a preliminary plea of insanity should be decided by a judge sitting alone or by a jury. Much may be said on either side, but one change seems urgently needed. In many cases the fact of insanity is obvious and admitted from the start. There should be some machinery for *at once* having a judicial ascertainment of it without waiting until a full-blown trial of the whole case can be held. It is not an ideal system which requires that a person who on the face of things has committed no crime, and who may in his normal condition be entirely law-abiding, should be kept for weeks or possibly months in a prison even under the relaxed conditions applicable to untried prisoners, should be associated with criminals of all sorts, and ultimately placed in a criminal dock. I do not know the therapeutics of insanity, but I should be surprised to hear that such treatment was other than highly prejudicial to even a confirmed lunatic, while I can readily understand that it might in some cases be fatal to all hope of ultimate recovery. The further practice of treating such persons after their irresponsibility has been established as *criminal* lunatics and associating them with those who are criminals first and lunatics thereafter also calls for alteration.

The case referred to by Professor Glaister—the Glenbuck murder—where for undisclosed reasons a capital sentence was set aside, raises broader issues. It is not the first time they have been raised, and unless the law is changed it will not be the last. Incidentally the question as to the Secretary for Scotland's position may be answered. It having been suggested that the King should exercise his prerogative on the ground of the prisoner's insanity, it fell to the Secretary to advise His Majesty. He in turn required expert advice and proceeded to procure it. What, however, happened was that a public trial having been held with every appearance of fairness to the accused, and having resulted in a verdict which commended itself with unusual unanimity to the community, its result was set aside by a tribunal of men whose names were not disclosed, whose inquiry was held in private, and whose opinions were never made public. I must not be understood as cavilling at the ultimate result. It is the method of reaching it which is open to challenge. It is to the credit of our courts and criminal administration that there was no criticism of their part in the case, and, on the other hand, any suggestion that the Secretary for Scotland or his advisers were influenced by outside or undue considerations must be ruled out as quite untenable. The key to the difficulty doubtless is that whereas the trial was in a law court where the medical evidence had to be looked at in the light of certain legally accepted standards to which it had to conform before it established irresponsibility, in the private inquiry no such necessity existed. Looking to the discrepant ideas of lawyers and alienists it is not surprising that different results were reached. Doctors may be excused from congratulating themselves on having thus, even by a side wind, got the better of the lawyers in the long struggle for the relaxation of the legal doctrine of responsibility. I might be inclined to join in their congratulations, but I am chastened by other reflections. It is imperative that our law courts should have the fullest confidence of the people. They cannot have that if their deliberate judgments are set aside in what the people, kept in ignorance of the reason, must regard as an arbitrary manner.

We pride ourselves in Scotland on the fact that our law courts have always shown a readiness to accept the established results of science as soon as there was assurance that they *were* established results. As was so well said by the Lord President in Brown's case, "What may be termed scientific opinion on insanity has greatly altered in recent years, and courts of law, which are bound to follow, so far as they can, the discoveries of science and the results of experience have altered their definitions and rules along with the experts." Over 200 years ago Sir George Mackenzie spoke of insanity in a manner peculiarly enlightened for his time and specially remarkable in one who earned the sobriquet of "Bloody Mackenzie." He, of course, accepted the current view that "absolute furiosity" was necessary for irresponsibility, but he went on to suggest that "by the rule of proportions" the punishment should be lessened for those who, not absolutely mad, are "hypocondrick and melancholly to such a degree that it clouds their reason." Further, he speaks of madness as "too sticking a disease and seldom or never cured," and suggests that the judge should remit something of the ordinary punishment for acts done in lucid intervals, because "where madness has once disordered the judgment it cannot but leave some weakness and make a man an unfit judge of what he ought to do"; and he quotes the proverb "once wud (i.e., mad) aye the worse." Mackenzie's dicta strongly recall the latest result of modern thought—the general conclusions reached by Mercier in his book on "Criminal Responsibility" (p. 203)—and it may be taken that they mitigated to some extent the hardships of the old Scottish Criminal Law. Then it is significant that, so long ago as 1863, the answers of the judges, which seem still to dominate English law, were practically discarded in the Scottish courts. Lord Justice Clerk Inglis then told a jury that if they were once satisfied that a person charged with murder was under the influence of insane delusions at the time, they had no occasion to inquire whether he knew what was right from what was wrong or whether he knew what was murder in the eyes of the law or what was a punishable act. Not till 45 years later do we find Mercier, in commenting on the Otley murder case, congratulating himself that it will not now be necessary to prove in our English courts want of knowledge of right and wrong, but only insanity at the time so as to establish irresponsibility.[1]

To-day it may, I think, be claimed that more regard is paid in Scotland than in England to the plea of "insanity of the will," if I may so call it; while in regard to "insanity of the intellect," attention may be called to the direction which the judge gave to the jury in the case of the epileptic, Brown. They were to judge whether Brown was "in the condition of a truly sane man who can not only tell his counsel how to defend him, but can tell his counsel with the certainty of not being deceived what he was really doing at the time when the act charged is said to have been committed." That direction referred to a plea of insanity in bar of trial, but if the same criterion of sanity is to be applied

[1] Journal of Mental Science, October, 1908.

to determine responsibility, then the most advanced alienist must admit that he has got more from the obdurate and conservative lawyer than he ever hoped to get.

The lawyer's position seems sufficiently clear and reasonable. He asks, first of all, for some greater unanimity than as yet exists among mental specialists, and points to the fact that one of the foremost of them in the book just referred to has to admit that his views, though they have been before the medical profession for many years, have not been formally adopted by any other writer. Even where unanimity does exist, he must remember that specialism has its Nemesis and is apt to exaggerate the importance of its own views, and he has to correct that exaggeration by reference to other considerations. He may still claim that the fear of punishment does stimulate self-control, and appeal to the practice of the doctors themselves who punish, at least by deprivations, inmates of asylums who are undoubtedly insane. Lastly, and with great cogency, he may point out that criminal administration must keep in touch with the opinions prevalent in the community, that it is from these opinions that it derives its sanction, and he may say that until public opinion is more ready to acknowledge advanced views on irresponsibility he must be chary of adopting them.

I should apologise for the length of this communication. I proffer the excuse that the lawyer does not often encroach on your space. I am, Sir, yours faithfully,

Ayr, Dec. 6th, 1909. P. FRASER MACKENNA.

THE STANDARDISATION OF DISINFECTANTS.

To the Editor of THE LANCET.

SIR,—The report of THE LANCET Commissioners in the last three issues of THE LANCET has reopened the question whether at the present time the very generally used method of ascertaining the germicidal value of disinfectants devised by myself and Mr. Ainslie Walker in 1902, is capable of being modified so as to give more useful information.

A suggestion in favour of the chemical assay of disinfectants, made by Mr. M. Wynter Blyth at the International Congress of Applied Chemistry in the spring, and a modification of the bacteriological technique published by Dr. Sims Woodhead and Dr. Ponder in the *Journal of Pathology and Bacteriology* in the summer were the starting points for this Commission's investigation. They finish by finding that only when the influence of several factors mentioned in the report have been determined will it be possible to modify any standard figure (H, p. 1616). I take it, therefore, that this investigation, like many others, had not led to any very definite conclusion, and that the new tests proposed in the report are not suggested as having any standard value.

The Commissioners claim: (1) that they can by a modified method of the chemical test determine the phenoloids present; (2) that the efficiency of an emulsion, provided that it is fine enough to show a Brownian movement, depends on the amount and the chemical constitution of the phenoloids as shown by the bromine absorption so that $\frac{P-B}{3}$ = germicidal value; (3) that for this relationship to hold good the Rideal-Walker bacteriological test must be performed in a novel manner. With your permission I should like to deal with these three points shortly in this preliminary note.

The method for the determination of the phenoloids is based upon the assumption that all the barium phenolates are very soluble in baryta water; as a matter of fact they must have varying degrees of solubility in this solvent. The ordinary pure carbolic acid, the only substance tried in the control test, happens to be the phenol which, according to the Commissioners' own admissions, is the one which is seldom if ever present in commercial fluids. I have therefore thought it advisable to test the efficiency of the process by taking as a control an emulsion containing some of the higher phenoloids used. My fluid was made up in the same way as that prepared in THE LANCET Laboratory and had by synthesis the following composition: phenoloids, 28·5; resin and fatty acids, 24·0; water and soda, 27·5; hydrocarbons, 20·0. This emulsion corresponds very closely with the trial fluid examined by them, the only marked difference being that instead of pure carbolic acid it contained those phenoloids usually employed.

When examined by the L.A.B. method by myself and also by two other independent chemists, the results were as follows:—

	R.	H.P.	L.
Phenoloids	21·3	18·1	17·0
Resin and fatty acids.	24·2	25·3	25·8
Water and soda ...	30·4	29·9	29·5
Hydrocarbons	24·1	26·7	27·7

The extraction with baryta is thus open to the very grave objection that the hydrocarbon and barium salts retain a considerable quantity of the phenoloids. I paid special attention to the washing with the baryta as recommended by the Commissioners, and, as will be seen, was only able to obtained 21·3 out of 28·5 per cent. present, but my chemical colleagues obtained even smaller quantities. Owing to this inherent fault it is therefore certain that in different hands differents results are obtained by this process. It is extraordinary that your Commissioners found more carbolic acid than was put into the fluid tested—i.e., 31·5 instead of 30·9 (p. 1457). This can only be attributed to the fact that, as I have already mentioned, the barium compound of pure carbolic acid is more readily soluble when compared with the others. In their control test the carbolic acid found is not only higher than that put in, but higher than that found by the bromine absorption process.

Another important point is that the weight of phenoloids recovered by this process taking the quantities directed is far too small to afford material for a proper examination as to their character. The deficit in the amount of phenoloids found by us is evidently due to the large proportion which remains in the barium salts of the resin and fatty acids. This magma is of a sticky treacly mass and it is impossible to remove from it even with repeated washings with the baryta solution the whole of the phenoloids present. Therefore the method of separation, by means of their barium salts, of the resin and fatty acids from the phenols at any rate in the case of the higher phenols absolutely fails. Owing to these fundamental defects in the process I have not thought it necessary to inquire into the value of the separation by means of acetone of the resin and oils from the precipitate. Another point which affects the accuracy of the process is that the phenoloids are so hygroscopic that it is impossible when dealing with such small quantities as one-third of a gramme to obtain anything like accurate percentages of these substances present. Take, for example, one of the determinations referred to above. Weighed at the moment at which it seemed probable that the ether and water had been driven off as prescribed by the method, 0·309 gramme, or 18·54 per cent., was obtained. After ten minutes this quantity was reduced to 0·303 gramme, or 18·18 per cent., and after a further 30 minutes to 0·293 gramme, or 17·58 per cent. When a difference of 1 milligramme in weight corresponds to 0·06 per cent. and the weight varies by several milligrammes, according to the time occupied in drying it is obvious that, if the separation of the phenols had been complete, the statement of the percentages to the second place of decimals in the analysis conveys a totally erroneous impression of the accuracy of the method.

It seems also very important that your readers should realise that there are two classes of emulsified disinfectants on the market—viz., those made by means of glue or gum and those made by means of resin or soap—and that the process as outlined in the chemical portion of the report is only applicable to the latter of these classes. If, as I contend, and as I think every chemist must acknowledge, the process does not extract the total amount of phenoloids present, it prejudicially affects those disinfectants in the second group as against those which are not tested by the same process. Thus, is it fair to contrast the composition of "Bactox" and "Okol" as stated in the report, seeing that the figures put forward represent their respective compositions as obtained by two different processes, although both are manufactured by the same firm? I feel that it cannot be too strongly emphasised that the analytical data for the various disinfectants given in THE LANCET report, and especially the percentage of phenols on which very far-reaching deductions are based, are obtained not by one uniform method of analysis having a constant error, but by two distinct methods of analysis according to the nature of the emulsifying agent used. The

results from these two methods do not admit of any comparison. The one, as has been shown, gives a percentage of phenols far below the true percentage, the error probably varying with the nature of the resin or fatty acid soaps used; the other, in accordance with common experience, affords results approximately correct, although rather higher than the real percentage.

The results of the analysis of the resin or fatty acids (soap) preparations are therefore not only hopelessly incorrect but are also unfairly compared with the results of the analysis of gelatin or dextrin emulsions obtained by a different method. And further, values have been deduced from the percentage of one constituent or one class of constituents, the phenols thus estimated—without reference either to the wide differences both in the disinfectant and the commercial value which obtains amongst the phenols themselves, or to the equally pregnant facts revealed by the chemical analyses as to the different nature of the emulsifying agents employed. In this portion of the report reference is made also to the great difference in germicidal value which is brought about by the physical character of the emulsion. It is clear also that the neutral hydrocarbons present are not "inert bodies" but must modify the germicidal effect when equal quantities of any given phenol are employed. Neither of these factors has been taken into account in the conclusions based upon analysis.

I have attempted to follow the bromide absorption results, but these have been dealt with by Mr. M. Wynter Blyth in the *Medical Officer* of Nov. 27th, and I need only say that I concur with him. I pointed out several years ago when working with creolins obtained from different countries that there seemed to be no fixed relation between the germicidal value and the bromine absorption figure, although some of the higher boiling phenols have small bromine absorption figures. I cannot, however, understand why the phenol percentage (assuming that it is correctly obtained by this method), less the bromine value, divided by three should give the germicidal value, as this arbitrary ratio does not seem to be justified by any of the work brought forward by your Commissioners. Take, for instance, the figures given for "Cyllin" and "Cyllin Medical," the phenoloids returned being 40·41 and 32·08 respectively. Even assuming that these phenoloids had the same bromine equivalent, the coefficient given for Cyllin Medical should be higher than that recorded. But we find that the bromine figure for the phenoloids extracted from Cyllin Medical is very much lower than that obtained for the phenoloids of ordinary Cyllin which should still further increase the coefficient of the former. As a matter of fact, from my own personal knowledge the Commissioners are hopelessly wide of the mark in the case of these two disinfectants, not only bacteriologically but chemically.

It is easy to be critical, but as on page 1616 they themselves say that further work is needed on the subject of the validity of their proposal I do not think that your readers can accuse me of being unduly anxious to detract from the merits of the work. If we examine "Cofectant," the first disinfectant given in the table on page 1612, we find this ratio to be 9·3 and the carbolic acid coefficient 9·8 when determined by means of the B. coli and spoons test and compare them with those for Bactox, the other disinfectant, which has a similar coefficient, 9·5, this ratio of $\frac{P-B}{3}$ falls to 6·8. This certainly does not support the contention of the Commissioners, although I believe that the low figure of 6·8 in the case of Bactox may be due to a retention of the phenoloids by the neutral oils. If this is not the explanation, and the manufacturers will be able to say whether it is so or not, we have only to fall back on the fact that the presence of 35·7 per cent. of hydrocarbons in "Bactox" as against none of those "inert bodies" in "Cofectant" causes an increase of germicidal value. I suggest therefore that the I. A. B. method in this case shows that if the amount of active phenols be reduced and replaced by hydrocarbons no interference in germicidal activity is produced. I am naturally gratified by your Commissioners' first bacteriological conclusion—viz., that "the Rideal-Walker method of testing disinfectants certainly gives accurate information under well-defined and strictly limited conditions, but results that can be set down in definite black and white figures are exceedingly difficult to obtain."

I have contended all along that these tests to be of any value must be done by a trained chemist and that many of the errors and disputes in the past have arisen through carelessness or want of skill on the part of the investigator. It is, however, very astonishing that the Commissioners should themselves admit the fact that they could only get 3 out of 11 consecutive tests. The conclusion is an obvious one and makes it possible for me to challenge their statement that no fluid on the market has a higher Rideal-Walker figure than 13. Apart from my own work, there must be thousands of tests now recorded throughout the world showing that for some years Cyllin, and now other manufacturers, have regularly been on the market with a Rideal-Walker figure much higher than that named.

With regard to the modification suggested I have compared the results recorded in the Commissioners' report with those obtained by Ponder and Woodhead when the use of platinum spoons was first suggested for this work.[1] A comparison of the table on Disinfectant D with Table XV., McDougall's fluid,[2] show that these are the two same tests as the figures are identical with the exception of the misprint of the dilution of 1/1400 in 30 minutes. It is, however, extraordinary that Woodhead and Ponder conclude from this table that Disinfectant D has an average coefficient of 7·4, whilst, when acting as your Commissioners, the same figures show a coefficient of 7·9. If your Commissioners had taken the trouble to repeat this particular table your readers would have been able to judge the accuracy of the process. Fortunately, we have a means of ascertaining the error in the Commissioners' test by the results obtained with Lawes' fluid, Table XIV. (p. 1525). This was called Disinfectant L (Table III.) in the pathological proceedings, and then had an average coefficient of 1·6. We now find that a previous test gave a coefficient of 2·1, and a recalculation of Table III., Disinfectant L, from the Commissioners' report, Table XIV., gives 1·65. There is thus a very considerable error in this method of control.

Elsewhere I have insisted that any lengthening at the time of the test so as to include a 30-minutes' time of contact is open to the objection that we want disinfectants to act in the shortest possible time. The change of temperature to 62° F.–67° F. is not justified by any scientific rule, nor does it offer any practical advantage. Long experience with the Rideal-Walker test has shown that accidental contamination is not at all likely. I have had none for two years in my laboratory, but this would not apply when working with open pots as suggested. It is an advantage to use a more resistent organism, but one cannot agree that "coli" is less variable than typhoid. Broth is a more delicate test for the recovery of the organism than is bile salt medium.

I have had no opportunity of using the spoons, but think that in some cases a quantity of disinfectant sufficient to inhibit growth the MacConkey tube might be introduced. A novel suggestion that the disinfectant in these small quantities acts as a stimulating tonic is not now referred to by the Commissioners. Moreover, the tubes do not show any improvement through using a spoon instead of a loop. To inoculate 12 tests in 2½ minutes with proper mixing must demand great skill, whatever applications be used. With regard to the change in the carbolic acid dilutions I may say that I always in my laboratory use stoppers, not corks, and have not noticed a daily disappearance of ·003 (·969–·966) in the germicidal value of the carbolic acid. It would have been interesting had your Commissioners ascertained in what space of time that germicidal value entirely vanished.

I am, Sir, yours faithfully,

SAMUEL RIDEAL, D.Sc. Lond., F.I.C.

To the Editor of THE LANCET.

SIR,—From the results published in THE LANCET of Nov. 13th, 20th, and 27th respectively, I am able to state with the greatest assurance that THE LANCET Commissioners have not examined "Sanitas-Okol" and "Sanitas-Bactox" as they are at present (and have been for some time past) made and sold, but that the observations were made upon old and superseded preparations. The published results therefore, satisfactory as they are up to a point, do not adequately express the real or comparative values of these two preparations, and I think care should have been taken to avoid such a possibility, either by obtaining the supplies

[1] Journal of Pathology, vol. xiii., p. 152.
[2] THE LANCET, Nov. 20th, 1909, p. 1526.

direct from the manufacturers, or if obtained indirectly there should have been a specification calling for the very latest products sold under the names in question.

Strong objection is also to be taken to the circumstance that in the case of one particular disinfectant referred to in THE LANCET report (Nov. 13th)—viz., "Cyllin," a calculation of value of cost is made based upon the bulk price of that article, whereas the corresponding calculations in respect of "Sanitas-Bactox" and "Sanitas-Okol" are based upon the price of small retail bottles. "Sanitas-Okol" as now made and sold is not a coffee-coloured emulsion, as described in THE LANCET report, and its percentage of active principles is not in accordance therewith, whilst its germicidal value is, I believe, considerably higher than that expressed in THE LANCET report.

Again, "Sanitas-Bactox" as now made contains a *much higher* percentage of active principles than that given, whilst its germicidal value is correspondingly greater than that expressed in THE LANCET report. According to THE LANCET "Sanitas-Bactox" contains 39·7 per cent. of phenoloids, whereas as now made it really contains much more, and subjected to Mr. Wynter Blyth's acetone process it shows a content of 54 per cent. Table XXVI. shows "Sanitas-Bactox" to be the cheapest of all the coal-tar disinfectants examined by the Commissioners having regard to germicidal efficiency, but as now made we claim it to be absolutely the strongest quite apart from price, and therefore even much cheaper than shown in THE LANCET report on the basis referred to.

Now, with respect to "Sanitas Disinfecting Fluid," which is classified in Group B as a coal-tar disinfectant, your Commissioners must have well known that it is not a coal-tar disinfectant at all, and as the germicidal test which has been imposed is only—speaking generally—applicable to coal-tar preparations, it is absolutely unreliable for adequately testing the disinfectant value of "Sanitas Disinfecting Fluid." "Sanitas Disinfecting Fluid" is quite well known to be derived from the oxidation of hydrocarbons of the terpene class (which are perfectly distinct bodies from phenols, cresols, and phenoloids) in the presence of water, and it may be noted in connexion with the analytical details given by THE LANCET concerning this article that your reporters have apparently overlooked certain important constituents which go off by volatilisation when that fluid is evaporated to dryness.

THE LANCET Commissioners must be well aware that just as the disinfectant values of corrosive sublimate, the permanganates, hypochlorites, sulphurous acid, formaldehyde, peroxide of hydrogen, and many other sanitary reagents, cannot be determined by the bacteriological test which has been used in respect of the coal-tar preparations which have undergone examination at their hands, so also that of "Sanitas Fluid" cannot be measured by any such test, and it is therefore remarkable, to say the least, that this particular preparation should have been singled out for examination by a test not applicable to it, and, further, erroneously described as a coal-tar disinfectant. The scant footnote in THE LANCET of Nov. 27th to the effect that "Sanitas Fluid" was inadvertently classed among tar disinfectants cannot be accepted as a sufficient reparation for the damaging blunder. The measure of utility of any such article is the extent to which it may be satisfactorily employed for the purposes for which it is advocated in accordance with the directions for use printed on the bottle labels, and no experiments or observations of this kind have been made by THE LANCET Commissioners in connexion with that very important and valuable preparation "Sanitas Disinfecting Fluid."

I entirely resent and dissent from the definition of disinfectant value forming the whole basis of THE LANCET report. What has been done amounts to the determination of germicidal values (not *disinfectant* values) of a number of coal-tar preparations by a particular bacteriological test, comparing the results at the same time with the ascertained percentages of certain contained principles, and in the result no advantage whatever is shown over the so-called Rideal-Walker test. The Commissioners fail, in my view, to properly appreciate the precise relations that exist between germs and disease as they should be viewed from the standpoint of practical disinfection, for while no one questions to-day the fact that many infectious diseases are originated by micro-organisms, yet in certainly 19 out of 20 cases it is absolutely unnecessary to employ strong germicides for practical disinfection. There are, of course, occasions on which the use of relatively strong germicides is called for, and valuable preparations are to be found not only in fluids of the coal-tar order, but there are other agents which are equally valuable, namely, such as perchloride of mercury, permanganate of potash, peroxide of hydrogen, formaldehyde, and so forth, in respect of which, however, the relative values as germicides cannot—as previously pointed out—be determined by the chemical method elaborated by your reporters on the one hand, or by the particular bacteriological test which has been used on the other hand. But my view of the matter goes deeper than that, concerned as it is with what has recently been termed a "revolt against the autocracy of the microbe." All along much too little regard has been paid to the opposing circumstances that disease-causing microbes have to overcome before they can establish disease. They do not create disease by their mere mechanical presence, but by the production, through chemical reactions, of certain definite poisonous substances. In other words, it is all a matter of environment, and their presence is more or less a matter of no importance so long as they are prevented from initiating the baneful changes which they are known to be capable of producing only under certain circumstances.

To put the matter in another way, disinfection is not equivalent to the mere destruction of microbes, and germicidal intensity is no measure of the value of disinfectant preparations. Removal by washing is often more efficacious up to a point than destruction by germicides. As THE LANCET has itself recently observed, "there is no factor more favourable to successful invasion of the human body by disease-producing organisms than when the air is rendered stale, warm, and musty," but no one would have resort to the use of strong coal-tar germicides for the purpose of changing the character of such air, but rather to the employment of "Sanitas Fluid" or peroxide of hydrogen, both of which are capable of doing all that is wanted in such case, but neither of which can be regarded as very powerful germicides, using the interpretation placed upon such substances by your reporters.

I go further and may point out that even supposing reliance be placed upon the use of strong germicides, for most applications the disinfectant is first of all diluted enormously with water, by which time the germicidal potency is reduced to a lower level than that of "Sanitas Fluid," which is generally used pure (undiluted) and which has the further advantage of revivifying the air by reason of the active oxygen which it contains in the form of peroxide of hydrogen. I contend that it is absolutely impossible to determine the relative values of various disinfectants by any one test, nor is such a determination called for either in the public interest or in that of municipal authorities. Disinfectants are many-sided both in character and in action, and comprise all preparations that can be usefully employed either antiseptically or for the destruction by oxidation or otherwise of filth, and generally for preventing the spread of disease. The definition of the term disinfectant is not synonymous with, nor is it to be confined to, mere germicides or poisons.

I shall be glad to know what action you propose to take in respect of this letter and to learn whether you will publish it as an addendum to the report, or procure new samples of our manufactures as now made and sold, with the object of determining their values and publishing the results before you finally close your report, or in what way you will do justice to our legitimate position and interests.

I remain, yours truly,

C. T. KINGZETT, F.I.C., F.C.S.,
(Ex-Vice-President, Society of Public Analysts),
Chairman and Managing Director of
the Sanitas Co., Limited.

Nov. 29th, 1909.

To the Editor of THE LANCET.

SIR,—Permit us to congratulate you on the public-spirited action which you have taken in appointing a Commission to inquire into the standardisation of disinfectants. Apart entirely from the fact that our disinfectant has passed your standard and been approved by your Commission as a genuine germicide, we think that the work of your Commissioners will be of lasting and very great benefit to the community as a whole.

In reading your issue of Nov. 13th, as well as that of the 27th, we cannot but ask you to be good enough, if possible,

to draw attention to the following facts. In the table showing the chemical results you show that our "Cofectant" (regd.) as purchased in an 8-ounce bottle cost 1·31*d.* per fluid ounce, and 6·6*d.* per 100 units of phenolic body. In your issue of the 27th you again work it out in this way, cost per ounce being 1·31*d.*, and you give it a comparative cost in pence of 100 units of efficiency, price ratio to carbolic acid equals germicidal ratio to carbolic acid × 100, this working out at 13·4 in the case of "Cofectant."

May we point out that if "Cofectant" is bought in 4-gallon tins it costs 4*s.* 3*d.* per gallon, which works out at 0·319*d.* per fluid ounce. Supposing one adds 33 per cent. for the profit of the retailer, this brings it up to 0·425*d.* per ounce, divide this by 9·8 × 100, and the figure in your last column becomes 4·33. Again, if purchased in 40-gallon casks, our price is 3*s.* 9*d.* per gallon, which works out at 0·2812*d.* per fluid ounce; add 33 per cent. and this brings it to 0·3742, which divided by 9·8 × 100 gives a price of 0·381*d.* for your last column. You will see that "Cofectant" bought in bulk is enormously cheaper even than crude carbolic acid.

If you could see your way in justice to us to insert this letter we should be extremely obliged, as when we determined to start in the disinfectant trade we determined to charge only fair manufacturing profits in order that we might supply the public with an efficient germicide at a reasonable price.—We are, Sir, yours faithfully,

EDWARD COOK AND CO., LIMITED.
THOS. ALEX. COOK, Director.

Bow, London, E., Dec. 3rd, 1909.

THE CONGENITAL FACTOR IN HERNIA AND ITS BEARING ON THE OPERATION OF RADICAL CURE.

To the Editor of THE LANCET.

SIR,—In 1899 there was published in THE LANCET a paper by Mr. R. Hamilton Russell of Melbourne on the congenital factor of hernia. The conclusions at which he arrived were set forth as follows: 1. Oblique inguinal hernia is invariably caused by the presence of a congenital sac which in the vast majority of cases is provided by patency of the whole or a portion of the processus vaginalis. 2. There is no evidence in favour of the view that congenital weakness of the abdominal wall in the inguinal region is a factor in the causation of inguinal hernia. 3. While actual weakness of the abdominal wall in the inguinal region is frequently met with and is an occasional cause of recurrence after operation, such weakness is not congenital, but is an acquired weakness due to the existence of the hernia and the use of a truss during a lengthened period. 4. Complete removal of the sac when performed before the abdominal wall has sustained such damage will not be followed by recurrence. 5. The causes of recurrence after operation are three in number—viz., (1) the above-mentioned acquired weakness; (2) incomplete removal of the sac; and (3) traumatism, the result of misguided methods of operating.

The existence of a congenital factor in some inguinal herniæ is, of course, obvious and familiar, but so far as I am aware no surgeon previously had put forward so sweeping and so consistent a theory and supported it by such cogent and convincing arguments. Although it was opposed to the current doctrines of the text-books and to the practice of most surgeons, this theory made many converts among those who were beginning ten years ago to operate on much larger numbers of herniæ than was formerly thought practicable or advisable, and anyone familiar with the trend of surgical opinion to-day as shown in periodical literature, and even in the later text-books, cannot fail to recognise that Mr. Russell's views have made great progress towards general acceptance. Nevertheless, the full importance of the congenital theory and of its bearing on operative practice is not, I believe, as fully realised as it deserves to be. Whether the ordinary inguinal and femoral herniæ are in their essential nature "ruptures," that is, the result of strain, or primarily due to a congenital sac, *and impossible without it*, is not a matter of mere academic interest but of vital importance in the operation of radical cure. If Mr. Russell is right, as I believe him to be, then the operation most generally practised in London—viz., that of Bassini or some modification of it—is based on a radical misconception. If we accept the older doctrine embodied in the popular term rupture we accept also the belief that the essential mischief lies in the abdominal wall, and consists of a weak or weakened inguinal or femoral canal, and the chief aim of an operation devised for radical cure must therefore be to strengthen or repair the canal. It is true that all operations for radical cure remove the hernial sac before dealing with the canal, but the method of dealing with the latter is considered the fundamental point of the operation by every surgeon who does not accept the congenital theory.

Since Mr. Russell's first paper appeared in 1899, an important piece of evidence in support of the congenital theory has been brought forward by Mr. R. W. Murray, who, in 200 consecutive post-mortem examinations made upon persons in whom during life there was no history or evidence of hernia, found 68 peritoneal diverticula, of which 44 were femoral, 22 inguinal, and 2 umbilical. This evidence shows that the "pre-existing sac" is no mere hypothesis either for inguinal or femoral hernia. As I pointed out in the course of a controversy with Mr. A. Keith and others in these columns in November, 1906, only one thing remained to carry the congenital theory to its logical conclusion—namely, to show that the radical cure of hernia could be carried out with certainty and success merely by complete removal of the sac without any attempt to strengthen or repair the inguinal or obliterate the femoral canal. Up to that date I had, after dealing thoroughly with the sac, narrowed the external ring by infolding and suturing the external oblique aponeurosis, or the fascia lata in the case of femoral hernia, in all cases except children under puberty. In the latter I had always ignored the canal. From November, 1906, to November, 1908, I had in my hospital clinic 250 operations of radical cure of inguinal and femoral hernia. In all of them but an insignificant percentage the inguinal canal was left absolutely unsutured and the femoral canal was left open except for a simple purse-string suture in the fascia lata and pectineus fascia. In perhaps 2 or 3 per cent. where the hernia was excessively large or complicated by undescended testis the external oblique was sutured so as to narrow the external ring. The patients were discharged from hospital after an average stay of 10–12 days and returned to their work, often laborious work, at the end of four weeks. None wore a truss after the operation. The cases were absolutely unselected, included all sizes and durations of hernia and every age from six months to 70 years. As I have shown in previous publications, when recurrence of hernia takes place after operation it appears almost invariably within 12 months of the operation. If, therefore, the closure of the canal is an essential part of the operation, a large number, if not all, of these cases would have recurred long before the present date. At the very least there should have been a greatly increased rate of recurrence. As a matter of fact, only 9 cases have presented themselves, and have all been cured by a second operation. As every case is kept under observation as far as possible for 12 months, and is told to report recurrence at once, I am confident that this number includes practically all recurrences to date. It is noteworthy that they do not include a single case of femoral hernia, and I have not in the whole of my experience had a single femoral hernia recur after operation. In a recent text-book on hernia by Mr. McAdam Eccles (1908) the author remarks: "The operation (for femoral hernia) should be undertaken only with the patient's or the friend's full knowledge that a cure cannot be confidently promised, and that a truss will have to be worn in many instances at any rate for some length of time after the operation has been done."

My own experience has convinced me, on the contrary, that a radical cure of femoral hernia can be absolutely guaranteed, and that the wearing of a truss after an operation for radical cure is merely a confession of failure. I submit that the results in the large number of cases I have quoted above are an absolute proof that the various methods of suturing the inguinal canal are unnecessary in hernia of any ordinary size, and a sufficient proof that the sac and the sac only is the *fons et origo mali*. The secret of success in operations for the radical cure is complete removal of the sac and the cause of recurrence is the failure to achieve it. If the canal is laid open in order to obtain access to the sac it must

of course be restored by sutures which, far from improving the result, are merely a source of weakness and trouble. As the sac can be completely removed without laying open the canal at all in all but a few complicated cases such as some irreducible hernias and cases of retained testes it is far better to avoid this procedure. By Kocher's method, which I invariably practise, it is perfectly easy first to free the whole sac and afterwards to drag it upwards and outwards until the whole of the lax peritoneum naturally present in the neighbourhood of the internal ring is rendered taut and smooth on its abdominal surface.

In this position it is maintained when the sac is invaginated and pushed through the abdominal wall close to the anterior iliac spine in the manner familiar to all who have looked at the excellent figures in Kocher's "Operative Surgery." Anyone who has once seen the ease and quickness with which this manœuvre can be accomplished and the perfect removal of the sac which it achieves I cannot imagine returning to the tedious and misdirected operations which depend for their result on suturing the inguinal canal. In speaking of perfect removal of the sac, I refer, of course, to the neck or upper portion and not the fundus. The neck of the sac is much longer than inexperienced operators suppose. If it is separated from the cord (not merely the vas but all the constituents) upwards to the full extent the actual junction of the neck with the general peritoneum is marked, as Kocher has pointed out, by a thick pad of sub-peritoneal fat which forms an outlying spur of the prevesical fat. Indeed, to obtain full isolation of the sac it is often necessary to expose and detach the bladder both in inguinal and femoral hernias. Unless this fatty pad is reached and identified a pouch of peritoneum, or at least a pit will probably be left and recurrence is certain. This I believe to be the only cause of failure—viz., imperfect dealing with the sac, and for the benefit of house surgeons and many others to whom I have demonstrated the source of fallacy I have summed up the whole duty of the herniotomist in a few words: the sac, the whole sac, and nothing but the sac.

I venture to commend this little aphorism and the facts which it embodies to surgeons generally. The operation for radical cure of hernia has become, next perhaps to the operation for adenoids, the commonest operation in surgery. It is performed in every hospital, large and small, in the kingdom, and the numbers run into prodigious totals. If there were less confusion of thought and more simplicity of practice among those who instruct the rising generation of students and practitioners we should hear less of operations which require four to six weeks in bed afterwards, or the "precautionary" use of a truss, or of refusing to operate on people over 40 because of the danger and uncertainty of radical operation. We should be able to agree that the operation is one of the simplest and safest in surgery, that it can be performed at any age, and that the expectation of permanent cure and relief from the nuisance of a truss can be reasonably and confidently put at 95 per cent. if no higher. I believe that the congenital theory of hernia explains and harmonises the anatomical and clinical facts which without it are full of confusion. Its general adoption will necessarily involve greater simplicity and uniformity in the operation of radical cure and will finally banish many of the complicated, misdirected, and imperfect operations which still cumber surgical text-books.

I am, Sir, yours faithfully,

EDWARD DEANESLY, F.R.C.S. Eng.

Wolverhampton, Nov. 28th, 1909.

THE LISTER INSTITUTE OF PREVENTIVE MEDICINE AND THE WORLD'S GRAPHIC PRESS.

To the Editor of THE LANCET.

SIR,—The governing body of the Lister Institute have noticed with much annoyance that a description with photographs of the Institute has appeared in an advertising pamphlet, entitled "The Petroleum Idea," issued by the Angier Chemical Co., Limited. As the appearance of this description has occasioned some surprise and perplexity amongst the members of the profession to whose notice it has come, the governing body would be grateful if you could find space for the enclosed letter of apology from the World's Graphic Press to the Institute's solicitors which sufficiently explains the circumstances.

I am, Sir, yours faithfully,

CHARLES J. MARTIN, Director.

Chelsea-gardens, Chelsea Bridge-road, London, S.W., Dec. 13th, 1909.

[ENCLOSURE.]

World's Graphic Press, Limited,
36-38, Whitefriars-street, Fleet-street,
London, E.C., November 26th, 1909.

Messrs. Hunter and Haynes,
9, New-square, Lincoln's Inn.

DEAR SIRS,—We are in receipt of your letter of the 19th instant with regard to the photos of the Lister Institute. We are very sorry if we have indirectly caused annoyance to your client who kindly gave us the opportunity of taking the photos of the Institute. We have not seen the pamphlet to which you refer for it was not published by us, but we understand that the photos used therein are photos which we supplied to a firm who asked for them. We stated at the time the permission was granted to us that we required the photos for publication in the *Scientific American*.

Please accept our sincere apology for the annoyance we have caused your client by supplying the photos to the firm in question. We undertake not to use or supply the said photographs to any journal or person without, in every case, previously obtaining the consent of the Lister Institute.

Yours faithfully,

WORLD'S GRAPHIC PRESS, LIMITED,
Sgn. J. SAVORY, Secretary.

THE INFLUENCE OF MIND AS A THERAPEUTIC AGENT.

To the Editor of THE LANCET.

SIR,—In your issue of Nov. 27th, in a letter concerning the therapeutics of suggestion, Dr. E. L. Ash, as I understand him, states that suggestion in most cases will fail unless accompanied by some material form of treatment with the exception of some mental conditions, and adds the further information that this is a matter of practical experience and not theory. It would have been better if Dr. Ash had stated explicitly if this view was the result of his own personal experience, and not left it to be gathered whether it was his or a generally accepted opinion. My own opinion is, and also that of the highest authorities in this method of treatment, that suggestion, unaccompanied by any material form of treatment, is very much more efficacious than Dr. Ash endeavours to make out.

Those medical men who practise suggestive therapeutics with or without the induction of hypnosis do not surround it with mystery, very much the reverse, for they give fullest explanations to their patients concerning the treatment and avoid every appearance of the mystical; but where the treatment is practised by quacks I grant that an endeavour is made to surround it with mystery and occultism. Further, I should like to know what Dr. Ash refers to when he talks about "the more doubtful adjuncts of suggestive therapeutics." This is casting a serious reflection upon those of us who use suggestive therapeutics with or without the induction of hypnosis, and calls for a definite explanation, which I trust Dr. Ash will be good enough to give, for it is most important that statements such as these should not be allowed to pass without the fullest investigation.

We who practise hypnotic suggestion do not seek to cloak the method of cure by making use at the same time of a material form of treatment, but tell our patients openly that we cure by means of verbal suggestion, and do not let them go away with a false idea that a material form of treatment has brought about the cure, as is so likely to be the case in the method of treatment which Dr. Ash advocates.

I am, Sir, yours faithfully,

DOUGLAS BRYAN, M.R.C.S. Eng., L.R.C.P. Lond.

Leicester, Dec. 8th, 1909.

To the Editor of THE LANCET.

SIR,—The letter of Mr. J. Foster Palmer in THE LANCET of Dec. 4th should not pass without protest, for not only does he deny any virtue to hypnotic influence, but he even accuses it of destroying reason, inducing insanity, and so on, and asks for its condemnation by "all right-thinking persons both in the medical profession and out of it."

To those really experienced in hypnotism Mr. Palmer's opinions appear to be based mainly on empty surmise, and they are hardly good-natured. He further declares, for instance, that only the feeble-minded are subject to the influence of hypnotism, when every reliable authority has found and proved and written that these are just

the subjects who are very difficult, if not impossible, to hypnotise, while the healthiest, body and mind, are the easiest. Nay, more, I have never yet seen a case in which, when properly applied, hypnotic influence has not conferred some amount of benefit, usually most marked and sometimes apparently miraculous. Let Mr. Palmer produce the cases of harm done to substantiate his assertions. There will at least be no difficulty in finding many hundreds illustrative to the contrary.

Recent contributions before learned societies and in medical journals indicate a growing interest and confidence in psychotherapy, including hypnotic influence, and it had need be so when quackery, faith-curing, and Christian Science in the hands of ignorant and unscrupulous operators have recently been gaining a dangerous ascendancy. Would it not therefore be advisable, in the interests of true science and honest professional labour, for some sort of a commission to sit upon the whole question of quackery, faith-curing, and hypnotic treatment? For by the searching inquisition involved under unimpeachable testimony educed we should surely reach conclusions which would serve to deservedly bring forward the true and mercilessly expose the false once for all.

I am, Sir, yours faithfully,

Caterham, Surrey, Dec. 5th, 1909. HAYDN BROWN.

THE HARD CASE OF THE LONDON STUDENT.

To the Editor of THE LANCET.

SIR,—The special articles on medical education appearing in THE LANCET throw much light on this question, but they do not encourage the hope that an equitable adjustment of the weights, carried by runners in the professional race, trained in London, is to be obtained quickly. Towards fairer treatment certainly many proposals have been made, only to arouse instant opposition and maintain the injustice. The institution of a State degree in medicine, recently advocated as meeting the case, does not, as objected, necessarily constitute the anomaly of a one faculty university, and did it do so a more anomalous situation than that now confronting the London medical student would not be created.

Possibly certain bodies may object to the institution of a State degree, fearing it might diminish their utility and prestige, but it can positively be asserted that to certain of them the existing disabilities of the London medical student, if much longer continued, constitute a far more serious menace. Indeed, it is more reasonable to believe that if the medical corporations could by means of the State obtain a degree in medicine for their diplomates their utility and prestige would increase rather than diminish. The alliance in another quarter sought by the two Royal Colleges in London does not appear calculated to enhance their prestige, and as it also does not appear likely to be effected it may not be out of place to plead for less curt condemnation of a State degree in medicine. Particularly so, since another alternative, a new university, seems out of the question. It is merely cruel to taunt London students with the fact that they possess a university already but do not use it; it would be fairer to say that London possesses an Imperial University which does not meet the general needs of London students.

I am, Sir, yours faithfully,

Dec. 11th, 1909. J. H. P. GRAHAM.

THE BRITISH WHITE CROSS MILK COMPANY.

To the Editor of THE LANCET.

SIR,—I have just read an account of a process of dealing with milk intended for consumption in the metropolis at the hands of a company patronised by Lord Lytton which seems to me to be open to criticism. Briefly stated, the process provides for the evaporation of the milk to a fifth of its original bulk, in which concentrated form it is despatched to London where it is diluted with water to make it up to the normal volume.

It strikes one as somewhat ingenuous to expect that milk purveyors will limit their intervention to the strict four-fifths, and even if we concede their honesty we can have no guarantee that the added water will be free from contamination, so that in reality it means opening up a further source of possible mischief. Moreover, if ever this practice become general it will add greatly to the difficulty of tracing the origin of epidemics which are suspected to be derived from the milk-supply, since it will not be the milk-supply that has to be inquired into but a series of water-supplies.

I am, Sir, yours faithfully,

ALFRED S. GUBB, M.D. Paris.

Mustapha Supérieur, Algiers.

THE THERAPEUTIC VALUE OF LIQUID AIR AND SOLID CARBON DIOXIDE.

To the Editor of THE LANCET.

SIR,—I am much interested in the criticisms of Dr. Stopford Taylor and Dr. R. W. MacKenna regarding what I have said as to the relative advantages of liquid air and solid carbon dioxide in my paper published in THE LANCET of Dec. 4th.

Reading their letter leaves me with the impression that they have not used carbon dioxide to any great extent, and that when they do it is not compressed as hard as I consider it should be to get the best results. It should be so hard that a fragment, say, as large as a filbert, thrown into cold water immediately sinks. With such a crayon, and proper adjustment of the two important factors of time and pressure, I have found it possible to get practically any desired depth and intensity of action, and as this varies from a mild and passing hyperæmia to a complete necrosis I quite fail to see how liquid air or any other freezing agent can do any better. An application of liquid air, even made in the manner described by your correspondents, is necessarily a transient one on account of the very short time it remains liquid under those conditions, and though the effect is very vigorous while it lasts, it cannot extend very deeply. With solid carbon dioxide, on the other hand, the application may last any length of time ever likely to be required without any fear of the supply giving out, and its temperature remains constant to the last. In addition to this, carbon dioxide is easier to obtain, easier to manage, very much cheaper, and a large cylinder of the liquefied gas, as used in the mineral water industry, can be kept on hand ready for use at any time, which cannot be done with liquid air.

It may interest your correspondents to know that while liquid air has been used to a considerable extent in the London Hospital, it has been almost entirely superseded by solid carbon dioxide on account of the superior advantages of the latter. I am, Sir, yours faithfully,

REGINALD MORTON.

Upper Wimpole-street, W., Dec. 13th, 1909.

ADAMS *v.* POMEROY: AN APPEAL.

To the Editor of THE LANCET.

SIR,—The case of Adams *v. Vanity Fair* and others is of considerable interest to the medical profession. The action was originally brought against *Vanity Fair*, Limited, the editor of *Vanity Fair*, the printers, the publishers, and the writer of the article, Mr. Ernest Pomeroy. The first four made and published a full apology to Dr. Adams, which she accepted on condition that they paid costs up to the date of their apology, so that, at an early stage of the hearing, proceedings were stayed against all except the last-named defendant, Mr. Ernest Pomeroy.

The article which formed the basis of the Adams libel action was published in *Vanity Fair* on Oct. 7th, 1908, and it is typical of the attacks previously made by Mr. Pomeroy against the medical profession, particularly in connexion with the subject of vaccination. It contained scandalous and absolutely untrue statements regarding the whole medical profession, and suggested an imputation against Dr. Adams personally which, if true, would necessitate her exclusion from the profession on the ground of infamous conduct. She strongly resented the general as well as the personal attack, and, in our opinion, she rendered a public service by her action in bringing the defendant into court at her own risk and exposing his methods. We believe that this view will be generally endorsed and that many members of the profession will be glad to show their appreciation of the trouble and anxiety incurred by Dr. Adams,

largely from altruistic motives, by contributing to a fund for the reimbursement of her out-of-pocket expenses.

After the judge's summing up, which contained a scathing criticism and condemnation of the writer of the article, and in which he emphasised the point that the individual opinions of the jury on the merits or demerits of vaccination ought not to affect their verdict, the finding of only ¼*d.* damages came as a surprise to those in court. The taxed costs will not cover all the legal expenses which Dr. Adams has incurred, so that there will be a deficit of at least £100.

Contributions are invited, and may be sent to the honorary secretary of the Adams Fund, Dr. L. Garrett Anderson, 114A, Harley-street, London.

We remain, &c.,

WILLIAM WHITLA.	JAMES BERRY.
HENRY T. BUTLIN.	FLORENCE NIGHTINGALE
EDMUND OWEN.	BOYD.
THOMAS BARLOW.	MAY THORNE.
VICTOR HORSLEY.	JANE H. WALKER.
MARY SCHARLIEB.	F. MAY DICKINSON BERRY.

The following subscriptions have already been received:—

	£	s.	d.
Mrs. Garrett Anderson, M.D.	5	0	0
Mrs. Dickinson Berry, M.D.	1	1	0
Dr. Albert Cope	0	10	6
Sir Victor Horsley	5	0	0
Sir Thomas Barlow	5	0	0
Mr. Henry T. Butlin	2	2	0
Dr. Jane H. Walker	2	2	0
Dr. May Thorne	5	0	0
Mrs. Scharlieb, M.S.	5	0	0
Mrs. Stanley Boyd, M.D.	2	2	0
Mr. Edmund Owen	2	2	0
Sir William Church'	1	1	0
Sir William Whitla	1	1	0

A DISCLAIMER.

To the Editor of THE LANCET.

SIR,—A report has recently appeared in certain papers of some proceedings in the Law Courts against a Mr. Dudley Wright. Several persons have been misled into thinking that this refers to our client, Mr. Dudley D'A. Wright, F.R.C.S., of 3, Bentinck-mansions, Bentinck-street, and we should esteem it a favour if you would be good enough to insert in your next issue a statement to the effect that our client is in no way connected with the defendant in the proceedings we have mentioned. One report of the case to which we refer appeared in the *Daily Telegraph* of the 6th inst.

We are, Sir, yours faithfully,

F. KIMBER BULL AND DUNCAN.

6, Old Jewry, London, E.C., Dec. 10th, 1909.

ANNUAL MEETING OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

To the Editor of THE LANCET.

SIR,—Every Fellow of the College becomes a Member as soon as he becomes a Fellow, so that I fail to see any point in the communication which you published last week under this heading from the honorary secretary of the Society of Members of the Royal College of Surgeons of England.

I am, Sir, yours faithfully,

Dec. 14th, 1909. A MEMBER.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about 180 dollars (£36), will be made on July 14th, 1910, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published. They must be typewritten, and must be received by the Secretary of the College on or before May 1st, 1910. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. The successful essay, or a copy of it, shall remain in possession of the College; other essays will be returned upon application within three months after the award.

THE POOR-LAW MEDICAL SERVICE IN FRANCE.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

THE NEW FRENCH METHOD PROMOTED BY THE MEDICAL UNIONS TO SECURE FOR THE POOR THE FREE CHOICE OF MEDICAL ATTENDANTS AND THE PAYMENT OF THE MINIMUM MEDICAL FEES BY THE MUNICIPALITIES.

THERE are in France unions or syndicates which, commencing as local organisations, have gradually federated together, so that to-day 8000 medical men belong, not only to their local union, but also to *l'Union des Syndicats Médicaux de France*. The mission of these syndicates is to defend the interests of the medical profession from the economic, legislative, legal, and social points of view. They seek to uphold the dignity of the profession, to defend medical men when unjustly prosecuted, to influence legislature when dealing with matters in which the profession is concerned, and generally to promote the corporate interests of medical men. Of late years one of the principal questions with which it has been necessary to deal relates to the medical relief of the indigent. While in England we are discussing how our Poor-law should be altered and improved our neighbours are endeavouring to create something like a Poor-law. In England every necessitous British subject has a right to claim relief and theoretically, at least, need never starve. No such right exists in France. There are State instituted and subsidised charities and relief bureaus that give a great deal of help, but the French citizen has no absolute right to such assistance. Certainly a law was enacted on July 15th, 1893, that was meant to confer upon all the right to receive medical assistance. But this law does not give the necessary directions as to the method of administration of such relief. It merely orders the *Conseillers Généraux* or county councillors to provide medical assistance in such a manner as will best serve the interests of the patients and of the public funds of the district and county authorities (*communes et départements*). Such vagueness has naturally produced a great divergence in the methods adopted by the various local authorities.

The medical unions, on their side, however, have fortunately entertained no difference of opinion. Even those medical men who had not thought over the matter and had no clear ideas of their own were very promptly indoctrinated by the unions to which they belonged and thus throughout all the disputes that have followed the profession has not failed to present a united front. The principle on which all are absolutely agreed is embodied by the one word freedom. The patient shall be free to choose the medical attendant he prefers, and the medical practitioner shall be free to undertake that sort of practice if it suits his convenience or interests. If a medical man be willing to take such cases and if he be fully qualified, then the mayor, or whatever other authority may be in charge of this service, must not refuse to put his name down on the list of medical men from which the poor have the right to select their medical attendant. Thus far it was easy to agree, but the question of remuneration was not so readily settled. Yet in principle that was also quickly arranged. There should be the minimum fee when the patient was able to consult the medical practitioner at his surgery, then a larger fee when the patient was seen in his own house if within one kilometre, and an increase for every kilometre beyond. The lowest fees suggested under these heads were 1 franc and 1.50 francs and 50 centimes per kilometre respectively, but many practitioners thought these sums far too low. Night visits were to be charged extra and all surgical operations according to the tariff under the law on accidents to workmen.

The local authorities did not in every instance endorse the views of the medical profession. They had ideas of their own, and having the undisputed authority proceeded to apply them. In many instances they adopted the system of the friendly societies. As soon as a person had established his claim to gratuitous medical assistance his name was placed on the list of a certain practitioner, and a small sum, a very small sum, sometimes only 2 francs, or 1*s.* 10*d.*, was paid for him per year to this practitioner. This system resembles the club system in England, except that the remuneration is even less,

and the patients being supposed to be paupers the payments are made by the municipality. Apart from the insufficiency of the remuneration, which is, however, a minor consideration, the great objection is that, while the medical man is converted into a salaried functionary the patient is deprived of the free choice of his medical attendant. Then further, the system lends itself to abuse, generally of a political character. A mayor may be tempted to put patients on the free list so as to secure their votes at the next election, and he may inscribe these patients on the list of the medical officer whom he wishes to influence in his favour, though the profits to be obtained from such practice must be slender. In rural districts, where the allowance for travelling adds considerably to the fees paid and where there are very few well-to-do patients, this poor practice is of importance. Even where the free choice of the medical adviser is established in principle it is not always applied in practice. For instance, Dr. Ed. Duchemin, practising in the department of the Côtes-du-Nord, relates that in many communes the mayor inscribes, or causes to be inscribed, on the ticket given to the patient certifying that he is entitled to gratuitous medical attendance the name of the medical man he is to consult. This is, of course, absolutely contrary to the regulations; it is for the patient himself to write in the name of the medical practitioner he prefers. On being questioned why they thus transgressed against the rule the mayors generally replied that the poor people were very embarrassed when called upon to make a choice. The weakness of this excuse becomes manifest when, on examining the choice made by the mayor, it proves to be in favour of some active political supporter or of a member of his own family. Such nepotism is inevitable whatever may be the system adopted so long as the patient is not given absolute freedom of choice.

The law of 1893, though susceptible to abuse, would be favourable to the interests of the medical profession if properly applied. It should put an end to the very extensive gratuitous attendance on the poor which falls to the lot of most practitioners. For all such attendance the public authorities have now to pay, a very small fee it is true, but nevertheless some return for frequently arduous work. On the other hand, there is the danger that some persons who are not poor, who could afford to give fees, will be put on the free list from motives of favouritism. The medical profession would therefore lose the better fees which these people as private patients would have to pay. Then there still remains a number of persons who are really unable to give anything and yet are too proud to apply for a ticket for medical attendance at the public cost. Such patients make promises they cannot fulfil, and thus in spite of the new law the medical practitioner finds that he has been working for nothing. There is, however, a way out of this difficulty. When the practitioner feels convinced that his patient is too poor to pay he can himself go to the town hall and demand that his patient be enrolled on the free list. Such a request when made by the medical practitioner himself is very rarely refused. Thus it amounts to this, that when the patient does not pay the municipality must do so in his stead. Of course, the municipality only pays the minimum fee and could easily recover the amount from the patient if the latter was only pretending to be poor.

Dr. Proby, of Oullins (Rhône), in *l'Avenir Médical*, suggests that when called to a patient who is manifestly unable to pay, he should be urged to claim his right to medical relief. It should be explained that this is no charity, but a right recognised by law, that everyone has to pay additional taxation so as to be insured against the extreme misery of having no medical assistance when ill. If the local authority hesitates to grant this right then application must be made to the representatives of the central authority—namely, the prefect of the department. The prefects are complaining that the law is not yet effectively applied, that many still suffer for want of proper medical attendance, and that the small local authorities are negligent; but the prefects cannot interfere on behalf of the poor unless the poor themselves complain. It would therefore be well if medical practitioners explained to the poor what are their legal rights. Dr. Proby argues that if a State or a nation offers medical attendance and medicine gratuitously to the poor this is done from praiseworthy motives of humanity, but there is also another reason. Such relief is given not only for the sake of those who receive it—there is a higher and more general interest to be served. The object is to preserve for the benefit of society the health of its workers, for this constitutes the most precious national asset. Especially is this the case in France, where there is no increase of population. Dr. Proby is very clear that the patient should have the right to choose his adviser. He says:—"Because a patient is in such unfortunate circumstances that he cannot afford to pay for a medical attendant, that is no reason why he should be deprived of the liberty of disposing of his own person. Do we not know that the confidence of the patient is the practitioner's most useful ally? Would it not be odious to impose a doctor on a sick man who must listen to the story of all his suffering, to all his confidences, all his secrets, who must bring him consolation even if he cannot cure him, when this doctor, rightly or wrongly, is not trusted but absolutely disliked by the patient?"

It is assuredly sound economy to see that the sick poor have medical attendance early, for otherwise their diseases will be aggravated and they will end by going to a hospital, where they will cost the community a much larger sum. The better the attendance given at the patient's home the less will be the pressure on the hospitals. If medicine and efficient medical attendance is provided gratuitously, many patients now taken to a hospital might remain in their homes surrounded by their families. This would cost less, especially in France, where nearly all the hospitals are municipal hospitals. But, of course, a patient is not so likely to receive good treatment at home if his medical attendant is not properly paid for his trouble. In any case, the medical attendant will seek to get rid of a troublesome patient by passing him on to a hospital. Thus from all points of view it is best policy to give full satisfaction to the claims brought forward by the medical syndicates, particularly as the medical practitioners who have not joined these unions are often consulted. Thus, for instance, in the department of the Cher there are 110 practitioners, some of them in the union, whilst some have not yet joined. Before communicating to the prefect and demanding the recognition of the principle of the free choice of the medical attendant by the poor in receipt of relief, all these practitioners were asked to state whether or no they supported this principle. The result of this plebiscite of the profession was: "Yes," 83 votes; "Yes, but with some conditions," 8; "No," 5; "Failed to reply," 14. In the course of time, and after the result of this vote had been submitted to the prefect, he agreed to negotiate with the Medical Syndicate so as to arrive at a common understanding with regard to the gratuitous medical service. Altogether and throughout France the principle of the free choice by the poor of their medical attendant has been admitted in 63 out of the 86 or, if the colonies are included, the 91 departments. But there have been many struggles and local medical strikes to bring about this result.

As an illustration of the way the system of medical poor relief works, a petition sent to its county council by the bureau of the medical syndicate of L'Ille-et-Vilaine may be quoted. This department, which has the town of Rennes for its capital and is well known to the English frequenters of St. Malo, possesses a total population of 611,805 inhabitants. Of these 50,817, or 8·30 per cent., receive poor relief. The outlay for public assistance is 262,131 francs (£10,525) per annum. This equals an expenditure per inhabitant of 0·43 franc, or 4½*d.*; or of 5·17 francs (4*s.* 1½*d.*) per recipient of relief. Out of this total expenditure, 89,150 francs, or 0·14 franc per inhabitant, or 1·75 francs per person relieved, are paid to the medical men in attendance. The department occupies the thirty-first rank in order of corporate wealth, and the third place as regards the number of persons relieved out of the 54 departments for which the necessary statistics are obtainable. In the department of the Loire-Inférieure, of which Nantes is the principal town, there is a population of 666,748 inhabitants, but only 38,441 receive poor relief, and in the Côtes-du-Nord, with 611,508 inhabitants, not more than 26,551 receive relief, yet it is placed as low as the seventy-first amongst French towns in respect to the wealth of its populations. In the Calvados those who receive poor relief cost 29·25 francs, in the Loire-Inférieure 19·60 francs, in the Côtes-du-Nord 11·58 francs, in La Manche 7·20 francs, and in Ille-et-Vilaine 5·17 francs, and of this latter sum, as already stated, 1·75 francs goes to the medical profession. In the department of L'Ain the medical attendant receives 4·35

francs on an average for every patient in receipt of medical relief. In 11 departments, out of the sum spent on each individual in receipt of poor relief, the medical attendant receives as his fees an average of 5 francs, or 4*s.*; in 22 departments he receives from 7 to 8 francs, in 11 departments from 8 to 10 francs, and in 12 departments from 11 to 13 francs. Out of the 54 departments that have supplied statistics 40 have adopted the principle of the free choice of medical adviser.

The chief objection alleged against this method is its greater expense. The poor, it is said, will naturally select the practitioner who treats them with the greatest kindness, and is easily induced to prescribe agreeable stimulants and restoratives; that therefore the bill for drugs and for relief in kind will be augmented. But there is no difficulty in establishing beforehand what sort of prescriptions may be made, and experience has shown that other systems are at times quite as expensive. Again, it is not as if these pauper patients represented a mine of gold. At best the remuneration for attending them is so very small that it does not constitute a sufficient temptation to induce a medical practitioner to go out of his way to secure their preference. Consequently it seems very likely that in course of time all the local authorities in France will apply the methods which have already been accepted by the large majority of county and district councils. The cost in France is generally borne by all three tax-collecting authorities: the commune, which in England we should call the rural or urban district council or borough; the department, or county council; aided, where there is special need, by subventions from the State. By indirect taxation, and especially by the *octroi* (or town dues), the poor pay a larger proportion of their incomes in taxation than the wealthy classes. The tendency is to look upon taxation more and more as a form of insurance against sickness and poverty and the other ills of life. The medical profession, by the voice of its representative organisations, declares that it endorses heartily all such social legislation, and its members are quite willing to pay the increased taxation in common with other citizens. But having thus subscribed its full share there is no reason why the medical profession alone should be expected to contribute further by attending on the poor without adequate remuneration. All other persons concerned are paid. The butcher, the baker, the grocer, who provide for the food, the clerks of the "Public Assistance" are all paid, and paid at the usual rate. The medical man alone is expected to give his services for nothing, or for next to nothing. But a great improvement will have been realised if henceforth the municipality is bound to pay when the patient fails to do so. The medical practitioner will then be sure of receiving at least the minimum fee. If the patient objects to the stigma of pauperism he has only to pay the fees and his name would at once be effaced from the free list kept at the town hall.

The following things will certainly bring about a very great change in the position of medical practitioners: Firstly, that no one, whether rich or poor, shall suffer for want of medical assistance; secondly, that the sufferer shall choose his medical adviser; thirdly, that the medical adviser shall receive at least the minimum fee, if not from the patient then from the municipality. This is certainly a very simple and yet a very thorough scheme of medical poor relief. Nor is this merely a scheme; its application is now in course of development. It has met with the almost unanimous approval of the medical profession of France and is endorsed by the great majority of the local authorities which administer the public funds destined for the relief of the poor.

PREGNANCY AND EMPLOYMENT.—Our Paris correspondent writes that a statute relative to the employment of female workers during pregnancy has just been passed in France. It provides that absence of a woman from work for eight weeks covering the period which precedes and follows her delivery shall not entail dismissal by her employer on the ground of breach of contract. The woman shall inform her employer of the reason of her absence. Any agreement waiving her rights shall be void in law. In the event of dismissal by the employer she shall be entitled to claim damages from him.

THE 1909 CHOLERA EPIDEMIC IN EUROPE AND SPORADIC PLAGUE IN THE NEAR EAST.

(FROM THE BRITISH DELEGATE TO THE CONSTANTINOPLE BOARD OF HEALTH.)

Cholera in Russia.

THE cholera returns for all Russia (excluding St. Petersburg) in the last few months are summarised in the following table:—

Between July	5th	and July	11th	.....	(858	cases,	384	deaths)
,, ,,	12th	,, ,,	18th	.....	(806	,,	348	,,)
,, ,,	19th	,, ,,	25th	.....	980	,,	454	,,
,, ,,	26th	,, Aug.	1st	.....	973	,,	428	,,
,, Aug.	2nd	,, ,,	8th	.....	819	,,	396	,,
,, ,,	9th	,, ,,	15th	.....	954	,,	401	,,
,, ,,	16th	,, ,,	22nd	.....	1373	,,	525	,,
,, ,,	23rd	,, ,,	29th	.....	1089	,,	533	,,
,, ,,	30th	,, Sept.	5th	.....	1242	,,	544	,,
,, Sept.	6th	,, ,,	12th	.....	1182	,,	533	,,
,, ,,	13th	,, ,,	19th	.....	979	,,	504	,,
,, ,,	20th	,, ,,	26th	.....	801	,,	379	,,
,, ,,	27th	,, Oct.	3rd	.....	598	,,	288	,,
,, Oct.	4th	,, ,,	10th	.....	442	,,	224	,,
,, ,,	11th	,, ,,	17th	.....	276	,,	168	,,
,, ,,	18th	,, ,,	24th	.....	(172	,,	78	,,)
,, ,,	25th	,, ,,	31st	.....	(125	,,	62	,,)
,, Nov.	1st	,, Nov.	7th	.....	(82	,,	39	,,)

(All the above dates are according to the Old Style.)

In this table the figures given within parantheses are uncorrected, and consequently considerably below the truth. During the present epidemic the Russian authorities have published weekly returns, but the figures given for one week have invariably been corrected during the subsequent week, and the result of this correction has always been to add something like 20 or 25 per cent. to the figures issued the previous week. For the first two and the last three weeks included in the above table I have only been able to obtain the uncorrected figures. The above returns, moreover, do not include the figures for St. Petersburg and suburbs, which have been as follows, since the disease appeared there in May last:—

Week ending—	Cases.	Deaths.	Week ending—	Cases.	Deaths.
May 23rd	23	12	Aug. 15th	172	81
,, 30th	58	19	,, 22nd	172	72
June 6th	174	40	,, 29th	183	49
,, 13th	489	140	Sept. 5th	244	90
,, 20th	557	193	,, 12th	262	103
,, 27th	643	271	,, 19th	256	99
July 4th	714	272	,, 26th	231	80
,, 11th	493	229	Oct. 3rd	208	98
,, 18th	361	158	,, 10th	128	55
,, 25th	231	98	,, 17th	99	41
Aug. 1st	210	77	,, 24th	81	20
,, 8th	196	71			

(In this table also the dates are according to the Old Style.)

The total figures for St. Petersburg down to Oct. 24th (Nov. 7th) had, therefore, been 6184 cases and 2368 deaths. The totals for the rest of the Russian Empire down to the same date had been 19,054 cases and 8485 deaths.

The present epidemic of cholera in Russia, like those of 1907 and 1908, has been very widespread, as shown by the following facts. Beginning in the city of St. Petersburg in May, it had by the first week in July extended to the following governments: St. Petersburg, Vologda, Arkhangel, and Olonetz in the north; Novgorod, Pskof, Vilna, Vitebsk, Courland, Livonia, and Finland in the west; Moscow, Yaroslavl, and Riazan in the centre; Viatka in the north-east; and Simbirsk on the Volga. In the week ending July 11th, the governments of Kharkof, Tver, Esthonia, and Kostroma were added to the list, and in the two following weeks those of Tula, Mogilef, Poltava, and Kherson. Then, in the week ending August 8th, the disease spread to the governments of Nijni-Novgorod, Samara and Saratof on the Volga, and to that of Perm, in the extreme north-east of European Russia. In the week ending August 15th it appeared in the Siberian government of Tomsk, and in that and the next two weeks it extended to the governments of Smolensk, Kovno, Kief, Ekaterinoslav, and the

Taurida. In the week ending Sept. 5th the governments of Minsk, Astrakhan, Voronezh, and Kazan first appeared in the list, and the presence of the disease was announced in Vladivostok, on the Pacific. (It would seem possible, even probable, that the infection in Vladivostok came from some centre in the Pacific, rather than by an extension from the west through Siberia, since none of the other Siberian governments, save that of Tomsk, have figured at any time in the weekly returns). In the week ending Sept. 12th cholera appeared in the governments of Grodno, Suvalki (Poland), and Ekaterinoslav; in that ending Sept. 19th Baku, on the Caspian, became infected; in the week ending Sept. 26th the governments of Tchernigof, Kaluga, and Tambof; in that ending Oct. 4th the town of Derbent (in the Caucasian province of Daghestan); and finally, in the week ending Oct. 24th the government of Volhynia appeared for the first time in the lists. Mention should also be made of an outbreak of the disease, in the last week of the series, in Yalta, on the shores of the Crimea.

The intensity of the epidemic has, of course, varied considerably in different parts of the country. It has been particularly persistent and severe in the capital, the figures for which were quoted above; and in the governments of St. Petersburg (1324 cases, 726 deaths), Arkhangel (744 cases, 381 deaths), Vitebsk (3390 cases, 1315 deaths), Tver (728 cases, 332 deaths), Yaroslavl (985 cases, 512 deaths), and Novgorod (768 cases, 358 deaths). The governments on the Volga have this time been comparatively lightly visited. In the more outlying parts of the empire it may be noted that 63 cases and 27 deaths have occurred in Baku; that in Derbent (Daghestan) there has been only 1 case and 1 death; in Finland only 10 cases and 5 deaths; in the Tomsk government (Siberia) only 2 cases and 1 death; while in Vladivostok, on the other hand, there have been as many as 142 cases and 94 deaths. (In each case the figures just quoted refer to the period between the beginning of the epidemic and the week ending Oct. 24th, Old Style). As on previous occasions, the present epidemic in Russia has been characterised here and there by the occurrence of "cholera riots" in a few villages, and by the carrying out in others of some very curious superstitious and practically pagan rites, intended to conjure away the evil demon of the disease.

A Case of "Laboratory Cholera."

The Russian medical journal, the *Vratch*, published in July last the following interesting details of a case of cholera contracted in the course of laboratory work. A lady student working in a laboratory in St. Petersburg was investigating the agglutination characters of a cholera vibrio isolated from a sample of water taken from a manufactory in the city. By accident some of the contents of a pipette entered her mouth. In spite of immediate efforts to disinfect the mouth, a typical attack of cholera followed, and the dejecta were found to contain enormous quantities of comma vibrios. Fortunately the patient recovered. The incident is a most instructive one, and the conclusions to be drawn from it are obvious.

The Pilgrimage and the Cholera Epidemic.

The fêtes of Kurban Bairam will take place in about three weeks from now. The contingent of pilgrims from the north has not been a very large one this year. They have been subjected to the necessary measures in the Turkish lazarets of the Black Sea and Mediterranean, and so far there has fortunately been no case even of suspected cholera among them. A suspicious death, however, recently occurred on board a sailing ship arriving at Kopmish, on the Russo-Turkish frontier east of Trebizond. The ship had come from some of the Russian ports on the eastern shores of the Black Sea.

Cholera in Persia.

Within the last few days it has been reported that cholera has appeared in the Persian portion of the (double) town of Astara, situated just where the Russo-Persian frontier comes down to the shores of the Caspian.

Cholera in Germany.

In view of the prevalence of cholera in the Baltic provinces of Russia it is not surprising that the infection has spread to the adjoining districts of East Prussia. The following details have been communicated officially to the Board of Health here. On July 20th a passenger arrived by train at Königsberg, coming from Russia. He was already ill and died the following day from cholera; the diagnosis was confirmed bacteriologically. On Sept. 18th a German raftsman died from cholera at Pokallna, Heidekrug (East Prussia), and his wife was attacked by the disease. The infection was believed to have been brought by timber rafts floating down the Memel from Russia. In these cases also bacteriological evidence confirmed the diagnosis of cholera. A sanitary station was opened at Schmalleningken, on the Memel. A Berlin telegram, dated Oct. 29th, stated that since Oct. 9th the following cholera cases and deaths had occurred in the basin of the Memel: in three places in the Heidekrug district 7 cases and 2 deaths; in two places in the Niederung district 11 cases and 2 deaths; and in that of Tilsit Land 1 fatal case. Measures had been taken, it was added, for the sanitary control of the river. Between Oct. 29th and Nov. 5th 3 cases occurred in one place in the Heidekrug district, 3 cases in two places in the Niederung district, and 4 cases in the Labian district. The two former districts are in the prefecture of Gumbinnen, and the last in that of Königsberg.

Cholera in Holland.

At the end of August news was received here that cholera had appeared at Rotterdam. From August 20th to Sept. 1st 25 cases of the disease were seen in that town, and 3 in other places in the Dutch provinces. About the same time 2 cases were reported from the neighbourhood of Amsterdam. From Sept. 1st to Sept. 7th 24 cases were observed in all Holland, of which 20 occurred at Rotterdam, and single cases at Middelburg, Utrecht, Breda, and Helsteren. Later information showed that the disease broke out first in Rotterdam, where, on August 20th, four persons died in one family alone. A bacteriological inquiry showed that they had died from veritable cholera. On Sept. 10th a case of the disease was reported from Dirksland and another from Amsterdam. No case had occurred in Rotterdam since the 4th. A telegram of Sept. 28th stated that "a second case" had occurred in Hanswert, the two patients being husband and wife, hairdressers, who took in boatmen as lodgers. Still later telegrams showed that a third case occurred in this family at Hanswert, that two cases had been seen at Lopik, and that at Hattom (near the Zuyder Zee) 4 cases with 1 death had occurred in one family. On Oct. 20th a fatal case of the disease was seen at Yaarsveld, in the Utrecht province, and a second case in the same family followed on Oct. 25th. Since then no further news has been received here concerning cholera in Holland.

Cholera in Belgium.

A telegram from the Ottoman Consul in Antwerp was received here early in September, stating that on Sept. 4th a boy, aged 14 years, had died in the village of Lillo, north of Antwerp, from fulminant cholera, and that his brother, aged 16 years, was attacked with the same disease; both were sons of the owner of a boat that had come to Lillo from Utrecht. In the former case a bacteriological investigation could not be carried out, but in the latter such investigation was made and showed that death had been really due to Asiatic cholera. It was further stated that on August 29th the owner of a barge coming from Rotterdam to Lillo had died from a suspicious disease, but that a bacteriological examination had given negative results. A later report from the same source, dated Sept. 28th, stated, on the authority of the Governor of the Antwerp province, that "none of the cases till then reported in Belgium had been confirmed bacteriologically"—a statement in direct contradiction of the earlier reports. A month later (Oct. 29th) the same consul telegraphed that, from personal inquiries, he had established that at a distance of 17 kilometres from Antwerp there had occurred in the course of eight days nine cases of Asiatic cholera with six deaths. Two days earlier the Belgium authorities had officially admitted that some cases of the disease in which the cholera bacillus had been found had occurred in the Antwerp province. It was believed that the infection had come from drinking water on board certain barges coming from Holland and touching at places on the banks of the Escaut.

Cholera in Galicia and Moravia.

On July 28th the Ottoman Embassy at Vienna telegraphed that a suspicious case had been seen at Lemberg, and in later telegrams, dated August 24th and 30th respectively, the same authority reported a suspicious case at Napagedl in Moravia, and a fatal case of Asiatic cholera in Galicia, the

name of the place where it had occurred not being mentioned.

Plague in Adalia.

It will be recalled that, as stated in my last letter on this subject (published in THE LANCET of August 21st, p. 576), 5 cases of plague, with 3 deaths, occurred at Adalia in July. After the 29th of that month no further case was seen until Oct. 25th, when 2 fresh cases were reported. The patients were the son (aged 4 years) and the servant (aged 15 years) of a merchant in the town. They appeared to have been ill since the 16th and 24th of the month respectively. On the 28th a third case occurred in the same house. The house had apparently simply been "cordonned," with sick and healthy together, and this patient developed the pneumonic form of the disease, which rapidly proved fatal.

Plague in Beirût.

The occurrence of a sporadic case of plague here in July was reported in a former letter.[1] Quite recently three fresh cases have been reported; the first was seen on Nov. 25th. He had then been ill for ten days. The second was seen on Nov. 27th (the eighth day of the attack); the third on Dec. 1st. In the first and third there was bacteriological proof that the disease was plague.

Plague in Alexandretta.

In both Adalia and Beirût plague has been probably endemic, though in sporadic form, for some time past. It has now appeared for the first time in Alexandretta. Two cases were seen there on Nov. 30th; they were the son and daughter of a labourer who had died with suspicious symptoms a fortnight before. At the same time a youth, employed in a store where grain coming from Bombay by way of Alexandria is dealt in, was also found to be suffering from plague. It is added that dead rats had been found in the latter store and in that where the father of the other two patients had worked. These two stores adjoined.

Plague in the Kirghiz Steppes.

In August last the Russian Plague Commission announced officially that several cases of pneumonic plague had occurred in the village of Iltoë, in the district of Ulentin, 140 versts from the town of Uralsk; 22 deaths had occurred, and no further cases were reported after July 31st. This village is obviously in the region of endemic plague described in my letter on this subject which was published in THE LANCET of April 24th last (p. 1197).

Dengue in Syria.

There has recently been a serious epidemic of dengue in Jaffa and in Beirût. Details are wanting, but it is stated that large numbers of people have been attacked in both places.

Constantinople, Dec. 3rd, 1909.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool Royal Infirmary: Roentgen Ray Installation.

Mr. C. Thurstan Holland, at the Royal Infirmary on Dec. 9th, gave an interesting demonstration with the "Snook" Roentgen apparatus which has been recently fitted up at the infirmary. The X ray department of the hospital in 1905 had 300 patients, and there were now about 3000 cases annually, each ward of the dispensary sending not merely cases where people had been injured by bullets, needles, pins, coins, &c., but cases of the chest, stomach, kidney, and other complaints. Many plates of such cases were shown by Mr. Holland, who said *Punch's* forecast regarding the little boy who ate overmuch Christmas fare and was subjected to the Roentgen rays had literally come to pass, although at one time it was entertained as a humorous idea. The cost in connexion with the X ray department at the infirmary was seriously increasing, and Mr. Holland mentioned that the hand of his assistant was permanently injured by the rays, despite the protective measures adopted. Additional accommodation for the X ray department would be afforded when the erection of the new out-patient department had been completed. Mr. Ralph Brocklebank (chairman of the committee of the infirmary), Mr. Holford Harrison (honorary treasurer), Sir James Barr, and others expressed their appreciation of the lucid demonstration given by Mr. Holland who so ably fills the post of director of the department.

Hospital Saturday Fund.

The Lord Mayor presided at the annual meeting of the Liverpool Hospital Saturday Fund, held on Dec. 7th at the Exchange Station Hotel. There was a considerable and representative gathering. The committee regret that, notwithstanding a strenuous year's work, there was for the first time since the year 1887 a decrease in the receipts for the year. Steadily from £2870 at that time the fund increased, until in 1908 the income was £10,136. Through a combination of circumstances, the principal one being trade depression and its consequent lack of employment, the returns for 1909 only show £8,775, a decrease of £1361. The greatest loss has taken place in the workshop collection. This is attributable to two causes. First, several amounts equal to nearly £90 from special efforts have not been available this year; and secondly, the serious decrease in the subscriptions from contributing firms, especially those where the systematic collection is adopted. The collection has suffered most where the weekly system is in force. Another serious loss has been the 10 per cent. so kindly promised by the guarantors, and which last year realised £433. Since the inauguration of the Fund in 1871 the sum of £179,360 has been collected through the agency of the Hospital Saturday Fund. There are at present 1082 firms assisting the Fund, a considerable number of which only have the annual collection, and the committee again urge the adoption of the weekly system.

Liverpool Medical Institution.

Dr. T. R. Bradshaw, senior physican to the Royal Infirmary and lecturer in clinical medicine at the University of Liverpool, has been nominated by the council of the society as president for the ensuing two years. Dr. Bradshaw has long taken an active interest as a member of the Faculty of Medicine at the University in the education of the medical student. He was the first to draw attention in this country to the significance of albumose in the urine and its association with a special form of bone disease, and gave to the clinical complex the name by which it is generally known in this country—myelopathic albumosuria. He has also been an examiner in medicine at the University of London.

Dec. 13th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

University Service at the Cathedral.

ON Dec. 7th a special service was held at the Cathedral, by invitation of the Dean, to celebrate the foundation of the University. The members of the corporation attended in state, and together with the University professors and a large number of students made an imposing gathering. The Vice-Chancellor, Pro-Chancellor, and Pro-Vice-Chancellor were also present. The sermon was preached by the Rev. A. A. David, M.A., late headmaster of Clifton College, who has recently been appointed to the headmastership of Rugby.

Testimonial to Professor Lloyd Morgan.

Subscriptions to a testimonial fund for Professor C. Lloyd Morgan are being collected from among those who are concerned with the University, either directly or indirectly. Professor Lloyd Morgan's services to the University of Bristol have not simply been those of an eminent science teacher; he was for many years Principal of University College until the University was born, when he became the first Vice-Chancellor. In both capacities he has striven with the utmost zeal to establish higher education and propagate the University idea in Bristol, and it is felt that the gratitude and admiration evoked by such labours need some outward and visible token such as the testimonial will supply.

The University Colston Society.

The Colston Society's annual dinner has been postponed till either February or March on account of the General Election. It is hoped that on the same day the foundation-stone of the new chemical and physiological wing will be laid.

Bristol General Hospital.

The president of the hospital, Mr. Joseph Storrs Fry, has

[1] THE LANCET, July 24th, p. 260.

given £1000 towards the reduction of the existing debt. The Ladies' Needlework Guild held its annual meeting at the hospital last week. The work done by the guild was on view. During the year about 2500 articles, valued at £420, were made, and £35 were subscribed for the purchase of blankets and other things which cannot be made by the guild.

Medical Inspection of School Children in Somerset.

At the last meeting of the Somerset education committee it was decided to appoint another assistant medical inspector at a salary of £250 per annum, with necessary travelling and out-of-pocket expenses. The gentleman appointed will be required to devote the whole of his time to the duties. He will have charge of the Axbridge, Long Ashton, and Wells districts, and he will also render general assistance to the chief medical inspector of schools. Dr. W. G. Savage, the chief medical inspector, reported that for the five months ended October last 8318 inspections of children had been carried out.

The Devonshire County Council and Criminal Lunatics.

At a meeting of the Devon county council held on Dec. 9th a resolution was passed to the effect that:—

This council is of opinion that there should be provided by the Government special asylums to which those convicted of crime and found insane during their period of sentence might be sent, after the expiration of such sentence, should they be found unsuited for a county asylum.

The council decided to send copies of the resolution to the Home Secretary and the County Councils Association.

The Nationalisation of Medical Service.

At the Plymouth Institution on Dec. 9th Mr. Robert Jaques delivered an address on the Nationalisation of Medical Service. There was a good attendance, and Mr. J. Elliot Square presided. Mr. Jaques, in the course of an interesting lecture, made three suggestions: (1) That the Poor-law medical service should be merged in the public health service; (2) the public health service should be national and not a local service, and should be greatly extended; and (3) all voluntary hospitals should be nationalised and all the members of the staff should be paid for their services.

The Royal United Hospital, Bath.

The annual meeting of the Ladies' Working Association of the Royal United Hospital, Bath, was held recently. The report showed that the association numbered 405 members. During the past 12 months 1202 articles of clothing for the patients and linen for the use of the hospital had been distributed.

The Long Fox Lecture.

The sixth Long Fox lecture was delivered on Dec. 14th in the Medical Library of the University by Professor Edward Fawcett, dean of the Faculty of Medicine and professor of anatomy to the University. The pro-Vice-Chancellor, Professor J. Michell Clarke, was in the chair. The subject, the Development of the Human Cranium, though an abstruse one, was lucidly expounded with the aid of many excellent lantern slides and wax models. Professor Fawcett explained the method of preparation of the models, which are built up by projecting serial microscopic sections on a lantern screen of suitable size; from the resulting pictures tracing designs are then cut out of beeswax plates of a known and appropriate thickness. Such models are of value not only for demonstration purposes but also for the elucidation of many doubtful details in embryology.

Dec. 14th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Proposed Reform of the Medical Curriculum in Edinburgh.

THE medical curriculum at the University of Edinburgh has been discussed and criticised at some length within the past few weeks in the newspaper press of Edinburgh. This has apparently been, in part at least, prompted by a report adopted by the Edinburgh Pathological Club on the curriculum and the general efficiency of the school. The report has been made sufficiently public to account for its being dealt with by the leading local newspaper, for University matters always arouse much public interest, not only in Edinburgh but in Scotland generally. The main points in the report referred to will be of interest to many of the readers of THE LANCET as they have more than a local bearing. The report at the outset indicates that as there exists practical coördination between the University and the extra-mural school the deliberations of the committee which was responsible for its final form centred round the University curriculum. It then makes the following general recommendations: (1) It is suggested that students should begin the study of medicine in summer, instead of, as is the more common practice, in winter; (2) that a fixed curriculum should be laid down, so that students should not be allowed to take classes practically in any order they chose; (3) wherever the earlier subjects of the curriculum may be studied it is desirable that the later subjects should be studied in Edinburgh; (4) there is a dangerous tendency in medical schools to treat each subject as if it were in a water-tight compartment by itself, and this may be obviated by consultation between different departments to arrange for the distribution and coördination of teaching the various subjects; and (5) it is recalled that in the rearrangement of the five years' curriculum the idea in the minds of clinicians was that the strictly scientific subjects would be overtaken in the first two years, and thus the last three years would be given over to the applied sciences and to clinical work. The report then deals with the individual subjects of the curriculum, and these may with advantage be dealt with in the same manner. *Botany and zoology.*—These subjects, it is suggested, should be replaced by a short course of systematic and practical instruction in *biology*. *Physics* should be extended by the addition of practical instruction to the present theoretical course. These two subjects, biology and physics, might be passed before the winter session began. *Chemistry.*—The teaching of this subject should be rearranged by coöperation between the departments of chemistry, physiology, and materia medica. By such rearrangement pharmacognosy would form part of the course of descriptive chemistry, while the time now allocated to practical materia medica would be available for organic chemistry, such as would be useful in medicine and would be a preparation for the study of physiological chemistry and of pharmacology. *Anatomy.*—The study of this subject and the examination in it should be completed before the third winter of study. *Physiology.*—The report practically accepts the views expressed by Professor E. H. Starling at the Sheffield meeting of the British Medical Association, when the subject was discussed by leading physiologists.[1] The report homologates the view that there ought to be a differentiation between physiology as a branch of pure science and as a subject of medical education. *Materia Medica.*—The two subjects of pharmacology and therapeutics should be treated separately. Pharmacology would be best studied after the examination in anatomy and physiology, and a course of 50 lectures and lecture-demonstrations is suggested. If the rearrangement suggested between chemistry, physiology, and materia medica were effected a course of practical pharmacology would be unnecessary. With regard to therapeutics, it is held that the curriculum should contain a systematised consideration of the subject apart from the treatment it receives in clinical teaching. It is suggested that a course of 50 lectures should be given in the fourth winter. *Pathology.*—Modifications of the teaching of this subject are considered to be necessary. It is suggested that in the third winter, when the student has begun surgery, there should be a course of 50 lectures in general pathology, and concurrently with these a course of 50 meetings for practical pathology, the two courses to form a correlated whole. At a later period there should be a further course in which regional pathology and the pathology of function should be treated of. From these subjects the report passes to the consideration of the "all-important practical subjects of the curriculum—medicine, surgery, and midwifery, and the special branches of these subjects." In Edinburgh the teaching of these three great subjects has long included a systematic treatment in lectures and clinical teaching at the bedside. It is recognised that a difference of opinion exists as to the part which systematic lectures should play in the modern curriculum, and the sanction for lectures is given under five heads—namely, (1) some students derive more benefit from oral instruction than from the reading of text-books; (2) in the earlier subjects where only a knowledge of a small part

[1] See THE LANCET, 1908, vol. ii., p. 479.

of a science is necessary it is often difficult to recommend a text-book which will cover the aspect of the subject required; (3) it is fitting that in a great University the individual views of the teachers should have the opportunity of finding expression; (4) in every subject there are general aspects of questions which do not find a place in text-books; and (5) the constant progress of knowledge makes it necessary to present the most recent views on a subject. It is, however, definitely indicated that the systematic lecture should take a less prominent place in the curriculum than it has hitherto taken. The three final subjects are then dealt with seriatim. *Surgery.*—It is suggested that in the third winter there should be a junior course of 50 lectures on three days a week and a senior course of the same extent in the fifth winter. The other three days a week would be thus available for tutorial work at the corresponding hour. With regard to clinical work, the necessity of insisting upon a definite course of study is again emphasised so that the precise course which each student should pursue should be laid down each term. It is also emphasised that in this way the number of students attending each surgeon should be rigorously limited by the equal distribution of the students to the various teachers. In the teaching, the services of the assistant surgeon attached to each full surgeon ought to be utilised. Importance is given to the out-patient department as a means of familiarising the student with the aspects of surgical practice seen there. Surgery is thus made to occupy a prominent place in the third winter and the following summer. *Medicine.*—In this subject the ideal course in systematic medicine is given as 90 to 100 lectures in which every system is dealt with generally. With regard to clinical medicine, much stress is, of course, laid upon the great importance of bedside work. It is suggested that the ordinary physicians should be so correlated to the clinical professors that the students would be equally distributed amongst the various teachers. It is also suggested that the assistant physicians ought to take a definite part in teaching. *Midwifery and Gynæcology.*—It is held that oral instruction as pursued in Edinburgh has many advantages, and it is not suggested that it ought to be altered, but that the lectures should be taken in the fourth winter. *Special subjects.*—These are also dealt with, but as the arrangements for taking them are largely a question of time table and not of principle, they do not require special mention. Attendance, however, on these subjects can only be properly regulated by a definite curriculum being laid down which the student must follow. *Examinations.*—With regard to examinations, it is suggested that the first professional subjects should be taken as they are at present. Anatomy and physiology should be passed at the end of the summer after the second winter. At the end of the third winter there should be an examination in pharmacology and elementary pathology, and in medical jurisprudence and public health at the end of the summer after the fourth winter. Another very important suggestion is made—namely, that when a candidate fails twice in a subject he should not be allowed to attend subjects in advance, but must lengthen his curriculum. The question of introducing a block system is referred to, but no strong opinion with regard to it is expressed. Other matters are dealt with in the report, but these have not the same wide interest that belongs to any proposals which have for their object the improvement of the teaching of the student.

Presentation of the Freedom of the City of Edinburgh to Principal Sir William Turner, K.C.B.

On Dec. 10th, on the invitation of the Lord Provost, magistrates, and councillors of the city of Edinburgh, a large number of citizens met in the Synod Hall to witness the conferring of the freedom of the city on Principal Sir William Turner, K.C.B., and the Rev. Principal Whyte, D.D., an eminent local clergyman. The Lord Provost, as is usual on such an occasion, gave a sketch of Sir William Turner's career in Edinburgh, and also sketched the relations past and present which subsisted between the town council and the University. As is also customary on such an occasion the recipient of the honour is expected to make a speech. This Sir William Turner did in his own strong and direct style; he was evidently much affected by having had the honour offered him and by the reception he received. He also referred to the connexion between the University and the town council and also spoke of his long connexion with the University. The event was of peculiar interest as the freedom of the city is not usually bestowed upon citizens. Principal Whyte unfortunately was prevented by indisposition from being present.

Proposal for a New Hospital for Women in Edinburgh.

A meeting was held some days ago in the council chambers, and presided over by the Lord Provost, which had for its object the inauguration of a scheme for a sort of paying hospital for women in Edinburgh, to be officered by men. The scheme met with some criticism at the meeting, and it will be difficult to float any new charity at present; while it would require to be made very clear that it is necessary to add to the medical charities of the city before the proposal would meet with any considerable measure of support from the public or the medical profession.

Appointment.

Dr. A. K. Traill, the medical superintendent of the Sidlaw Sanatorium, Dundee, has received an appointment at the Municipal Sanatorium, Salterley, Birmingham, and has resigned his present appointment.

Poorhouse Medical Officers in Dundee.

At a meeting of the subcommittee of the Dundee parish council it was agreed to recommend for the staffing of the East Poorhouse Hospital a senior medical officer at a salary of £120 per annum, and a junior at £100 per annum. Under this scheme the services of the present medical officers would be continued.

Proposed Infirmary Extension at Dundee.

A scheme for the erection of a large building in connexion with the out-patient department of the Dundee Royal Infirmary was under consideration at a meeting of the management committee on Dec. 9th. The erection will cost between £3000 and £4000, and it is understood that Mr. J. K. Caird, who has frequently come forward to help the infirmary, has promised substantial aid towards the cost. It is proposed that the building shall face Barrack-road, and the matter will come up for further discussion at the quarterly meeting of the governors.

Consumption in Turriff.

At a meeting of the Turriff district committee a letter was read, dated Nov. 11th, containing resolutions adopted at a conference on pulmonary phthisis—namely, that notification should be compulsory, that infection should be traced out by officers of the local authority, followed by disinfection where necessary; that hospital accommodation should be provided for cases that could not be treated at home. A letter from the town clerk of Turriff was also read suggesting a conference with the town council as to the advisability of extending the present hospital to admit consumptive patients. The feeling of the meeting was in favour of notification and disinfection, but with regard to hospital accommodation there was doubt expressed. Eventually the chairman moved:—

That the district committee approves of the first three resolutions of the conference on pulmonary phthisis, and resolves to make notification of phthisis compulsory in the district and to instruct the sanitary inspector to assist in disinfecting houses where the disease occurs; but while willing to discuss this matter with the town council, is of opinion that a grant should be given by Government for that purpose before any provision for hospital accommodation is made from the rates.

The motion was unanimously agreed to, and the matter of meeting the town council remitted to the hospital committee representatives.

Dec. 14th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Irish Universities.

THE following figures give in round numbers the students at present attending the Irish Universities:—National University: (*a*) University College, Dublin, 90; (*b*) Cecilia-street Medical School, 270; (*c*) University College, Cork, 320; (*d*) University College, Galway, 120; total, 800. University of Dublin: Trinity College, 1200; Magee College, 90; total, 1290. The Queen's University of Belfast: Faculty of Medicine, 252; Faculty of Arts, 201; Faculty of Science, 110; Faculty of Law, 12; total, 575. As a result the total

University students at present in Ireland are 2665. In Belfast the numbers last session were 456.

Irish Meat-Supplies.

The Local Government Board has just issued a new code of regulations relating to the inspection of all foreign meat imported into this country. The foreign meat trade was very small, indeed, when the old regulations were drawn up, but it has attained considerable dimensions, and it is desired by dealers in the article of home production that the imported meat should be submitted to a process of inspection at least as searching as that which is applied in the case of Irish meat. Of the two varieties of cold-preserved meat which are brought into this country, the "chilled" comes from Liverpool, where it has been slaughtered within the previous 24 hours or less before its arrival at an Irish port; while the frozen comes in many cases from some of the most distant parts of the earth, and may have been killed many months before arrival here. It is hoped that the new regulations for Ireland will provide precautions as careful and effective in the safeguarding of the public meat-supply and the public health as are enforced at the Port of London. It is significant of current opinion that a motion brought before the Limerick county council with the object of discontinuing the attendance of veterinary inspectors at fairs was promptly rejected, and at the annual dinner of the Dublin Victuallers' Association, which took place on the evening before the opening of the Cattle Show of the Royal Dublin Society last week, Mr. T. P. Gill, secretary of the Department of Agriculture, pointed out that the cattle trade of Ireland was being outstripped by other trades not usually considered of so high importance—trade in the produce of the dairy and the poultry-yard and that of bacon. Last year the value of these amounted in round numbers to £9,200,000, while that of the cattle exports made a total of £8,900,000.

Richmond Asylum v. *Local Government Board: Report of Judgment.*

The joint committee of the Richmond Asylum has published a full report of the judgment which was given in its favour in the Court of King's Bench in the case in which it successfully contested the payment of four surcharges which had been made by the auditor of the Local Government Board. The printed report of the legal details and the circumstances in which they originated (to which I have already drawn attention in this column) is accompanied by an instructive memorandum drawn up by the chairman of the committee (Mr. Richard Jones), who points out that the judgment has established that Irish public bodies are endowed with the right of protection of the interests of the members of the working population by the adoption of the fair wages resolution, and special attention is directed to the passage in which the Lord Chief Baron stated that they should guard to the best of their abilities against the danger of having that clause rendered a dead-letter. Such bodies, in the expenditure of public money, are entitled to exercise the same discretion that the members would use in the conduct of their own private and personal affairs, which includes the power of rejecting the lowest tender when it is thought fit to do so. And he indicates, finally, that it is decided that public bodies are to be allowed to manage, in the real sense of the word, the affairs which were entrusted to them—"that these gentlemen are not appointed to be mere clerks," as the Lord Chief Baron forcibly expressed it. This report will doubtless inaugurate a notable departure in the transaction of public business by the various Irish boards, and the thanks of the Irish public are due to the chairman of the Richmond committee for the preparation of the memorandum, and to this body for the publication of it and the report which it accompanies.

Bangor Hospital, Co. Down.

On Dec. 9th the foundation-stone of the new hospital at Bangor was laid by Miss Connor, who has contributed £500 to the building fund. Situated on an excellent site, this useful cottage hospital will afford accommodation for medical and surgical cases, with rooms for matron and nurses, and with an excellent operating theatre. A simple style of early Georgian architecture has been adopted, carried out in solid red brick with sandstone sills and copings.

The Belfast Branch of the Women's National Health Association.

At the second annual meeting of the Belfast branch of the Women's National Health Association of Ireland held in the city hall, Belfast, on Dec. 13th, the Right Hon. the Lord Mayor presiding, very gratifying reports were presented from the various subcommittees on the prevention of tuberculosis, the promotion of school hygiene, and the formation of babies' clubs, showing the admirable preventive work that was being done. Among the speakers were the Lord Mayor and Lady Mayoress, the Dowager Marchioness of Dufferin and Ava, the Right Hon. Thomas Sinclair, D.L., Mr. J. S. Bryars (chairman of the Belfast board of guardians), and Dr. W. J. Maguire.

Dec. 14th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Honours to Enrico Giglioli.

THE "Republic of Science" is about to show its appreciation of the life and work of this veteran in the field of comparative anatomy and ethnographical exploration by celebrating on Dec. 20th the completion of his fortieth year of professional instruction in the Istituto di Studi Superiori in Florence. Nature students of all nationalities throughout Christendom are taking part in the ceremony and already a lengthy list of names has been received by the secretary of the organising committee (Dr. E. Balducci, Via Romana 19, Florence) in attestation of the universal interest evoked by the anniversary. Among these I may notice the representatives of nature study in the English-speaking world—British, colonial, and American—such as J. T. Cheeseman, Robert Etheridge, Professor A. C. Haddon, Sir E. Ray Lankester, Professor Henry F. Osborn, Charles H. Read, Professor G. D. Thane, Professor E. B. Tylor, Professor Bernhard H. Woodward, and Dr. E. P. Wright. These gentlemen, in compliance with the invitation of the committee, have forwarded to the secretary either their autograph, their *carte de visite*, or their photograph to be inserted in the album—an artistically illuminated volume in symbolical binding to be presented to Professor Giglioli along with the congratulatory address on Dec. 20th. Other participants in the "testimonial" (for such in a signal sense it is) are in course of doing likewise, thereby giving to the commemoration an "ecumenical" character in keeping with the kinship, or rather the brotherhood, of science. There are special reasons for the cordiality with which English-speaking nature-students have responded to the appeal. Giglioli is described by his compatriots as "Italo-Inglese," having been born of Italian parents on June 13th, 1845, in London, where, after graduating in medicine at Pisa, he worked with Professor Huxley as a trusted disciple and co-adjutor. He made a voyage round the world in the *Magenta*, and enriched the "Museo di Storia Naturale" in Florence (in which he has long been director of the "Gabinetto degli Animali Vertebrati") with specimens, as valuable as they are unique, of zoological treasure-trove. A member of the "Consiglio della Società di Anthropologia," he has laid its transactions under heavy obligations by original research, while his published writings entitled "I Tasmaniani: Etnologia e Storia di un Popolo Estinto"; "Zoologia della Magenta"; "Relazione del Viaggio intorno al Globo della Pirocorvetta Magenta"; "Iconografia dell' Avifauna Italica"; "Un Bisogno Urgente dell' Antropologia"; "Notizie sul Kalang di Giava"; "Studi Etnologici in Siberia," and many others bear witness to the variety and comprehensiveness of observations distinguished by painstaking accuracy, clear exposition, and charm of style.

Superstition.

"How 'green' is this grey world" (Shelley's memorable line) might have been the motto of Professor Pio Foà's recent lecture before a popular assembly at Milan on "Pregiudizi e Vittorie di Medicina." Superstition playing into the hands of charlatanism dates from remote antiquity and finds illustration even in what the platform declaimer referred to as "this so-called twentieth century." A generation which has witnessed the pathological and therapeutic triumphs of Virchow, Pasteur, Lister, Koch, Behring, and Schaudinn is still capable of such tragedies in "faith-healing" as that reported from the quondam states of the Church, where a poor peasant woman, bitten by a mad dog, was dissuaded from using the money subscribed to take her to the

"Istituto Antirabbico" in Rome and prevailed upon to dedicate it, with prayer, to the local Madonna, whose "saving grace" (she was assured) was worth all the medical treatment in the world. As a result of this advice she died in what the newspaper records as "dolori strazianti" (excruciating pain)—her money gift and fervent prayer notwithstanding. "Ignorance," in Loyola's phrase, "may be the mother of devotion." But it is also the parent of misery and suffering unspeakable, especially in a country where the "analfabeti" (unlettered) number more than one-third of the population.

A True Sister of Mercy.

Miss Alice Burke, whose many gifts, including a rare *sagacité de cœur*, were for 20 years devoted to the ailing and the injured in the Hospital of Santa Catarina in Florence, died on Nov. 23rd, at her residence in the Tuscan capital. The tragic fate of Mr. Thomas Burke, Under-Secretary to the Irish Viceroy—assassinated in the Phœnix Park, May 6th, 1882, in company with Lord Frederick Cavendish, who tried to save him—not only cost her a dear brother's life, but profoundly affected her own. Associated with him in his office and home in Dublin Castle, she left her native Ireland never to return, and for the last 22 years found distraction and solace in Italy, devoting to fine art, particularly painting, such time as she could spare from the self-imposed duties of the hospital. In water-colours she reproduced the *chef-d'œuvres* of the old masters with a fidelity and power that attracted many artists, Italian and others, to the studio, while her *salon* was the congenial resort not only of these but of other guests distinguished in science, literature, and affairs. A niece of Cardinal Wiseman, and sharing much of his conversational charm in four languages, she drew around her all that was most distinguished in Florentine society, resident or migratory, enlisting their sympathies, moreover, in her numerous charities, among which was her relief work in behalf of the survivors of the Siculo-Calabrian cataclysm. This, the last of her more conspicuous efforts in the philanthropic sphere, told heavily on a constitution naturally strong and elastic, but impaired by profound if nobly suppressed grief and by strenuous devotion to the religious life; and so the malady, which she had long struggled against in secret, after months of suffering at last prevailed. Her funeral was attended by numbers of the Florentine poor, for whom her grave at San Miniato, where, beside her artist brother Augustus, she sleeps under a Celtic cross of her own designing, will long be a "point of pious pilgrimage."

Small-pox in Italy.

The Association for Promoting the Influx of the Outlying World into Italy will do well to use its undoubted influence with the central authorities so as to mitigate, if not remove, one at least of the far too numerous deterrents to the "influx" in question—to wit, the steady spread of small-pox throughout the kingdom. The correspondence columns of THE LANCET have drawn attention to the epidemics of the disease at Parma, at various points on the Milan-Domodossolo line, and more recently at Salerno—all these, be it noted, occurring within a few weeks of each other and all of them implying culpable negligence in vaccination. But as if the admonition were unavailing, one of the leading journals of Italy, the *Secolo*, alarms its readers this morning with the announcement of "Small-pox at the Gates of Milan," and proceeds to give authentic details of the number of cases, the number of deaths, and the frantic efforts, promoted from the Lombard capital, to undo the disastrous results of communal "trascuranza" (negligence), first, in prevention, and second, in treatment. Take, for instance, the following typical specimen of the *modus operandi* (or rather the *modus negligandi!*) brought home to the "bureaucratic authorities" within less than four miles of the most prosperous of Italian cities. At that distance from Milan there is the township of Turro, which, two years ago, numbered 593 souls, and which has recently added to its population—mainly by fugitives from Milan unable to meet the cost of house rent and food—some 10,000 more, huddled together in old, or insufficient new, tenements, and living under conditions compatible only with misery and disease. Two years ago the school counted 50 pupils, now there are 700, without proportionate addition to the accommodation—a state of things, perhaps, intelligible when, according to the *Secolo*, the finances of the commune are verging on bankruptcy, with a debt of some 20,000 francs and with only some hundreds in the *cassa* to meet it. Add to this that Turro is the refuge of the *malandrini* (malefactors) who have made Milan too hot to hold them—"undesirables" who import not only vice and crime, but actual disease, living as they do beyond the pale of law and administrative surveillance. Small-pox in such a population will spread in proportion as vaccination has been either neglected altogether or perfunctorily applied. Nor is Turro the only neighbour from which the Lombard capital is threatened. Lodi and its vicinity—according to the *Secolo*—are also suffering from the same visitant. Here, again, as at Turro, the efforts at isolation, disinfection, and revaccination are put forth with febrile energy, in tardy replacement of the measures which, taken in time and with due care, would have kept the disease at bay. All this is unpleasant reading for the Italian and the non-Italian world alike—spelling for the former the loss of that "foreign import" (as it terms the "paying guest" from abroad) to which it owes one-third of its revenue; and for the latter the loss of that sojourn in the winter and the spring season to which it looks for health and vigour during the remainder of the year. The winter now upon us is one, which from various causes, can ill brook the gratuitous deterrent of small-pox. The "arrivals," hitherto, have been below the average in all the chief towns of Italy—a fact for which the General Election shortly to be held in the British Isles is partly responsible. Other causes are mentioned as conducing to the same "falling off"—anticipated reduction of income and the prospect of enforced economies, ascribed (rightly or wrongly) to recent fiscal legislation, being among them. The situation, indeed, is one which Italy, in her own interests, cannot ignore, fraught as it is with loss to her from within and from without, and only to be retrieved, on her part, by systematic and steady enforcement of her "Codice Igienico," which, admirable as it is "on paper," has hitherto been but sparingly utilised in practice.

Dec. 6th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Annual Meeting of the Austrian Medical Councils.

THE continual difficulties which the medical profession has to encounter in this country in regard to its organisation and the furtherance of its lawful requirements have led the Aerztekammern, or Medical Councils, composed of the representatives of the profession in all parts of the country, to hold an annual meeting for the discussion of important questions. Such an annual meeting is called the Aerztekammertag, and the one for the present year was held at Vienna during two days in the end of November. One of the subjects was that of insurance against various risks. A company for insurance against accidents and also for life insurance has been called into existence by medical men, and a special point of this company will be insurance against charges of malpractice. Claims against medical men on the ground of malpractice have increased to such a degree as to become a serious danger, for although nearly all the cases brought into court are dismissed, the expenses incurred by practitioners in their defence are nevertheless very heavy. Much time was devoted to the discussion of the proposed Socialversicherung (general insurance against sickness) by the Government. As the friendly societies and the obligatory sick-clubs try to obtain as many members as possible, claiming eligibility for all persons who earn their living by employment, only patients who are of independent means would be left for private practitioners. In this country the majority of medical men would be ruined if this view were adopted by the Legislature. This proposed insurance against sickness is embodied in a Bill promoted by the Government and is intended to relieve the working-class in times of difficulty, especially during illness of the bread-winner. Now the political parties and also the section of the population mostly concerned have proposed that every person earning less than 4800 kronen (£200) a year shall come within the scope of the law—i.e., should be required to become a member of a Krankenkassa, or sick-club. These clubs provide their members with free medical

attendance and daily sick-pay, the medical officers being appointed by the clubs. These provident institutions are very beneficial to their members, but, on the other hand, they have a disastrous effect on medical practice, because for a salary varying from £100 to £200 a year, and never exceeding the latter amount, the medical officer of the Kassa has to attend at least 1000, but more generally from 3000 to 5000 persons all the year round. In these circumstances, private practice in the ordinary sense is hardly possible. The medical profession, on the other hand, wishes to limit the income which carries with it compulsory membership of a Kassa to 2400 kronen (£100) a year. The statistics compiled by the Surveyor of Taxes for 1907 show that in Vienna alone there were 73,000 wage-earners who had returned their annual incomes as being between 2400 and 4800 kronen. If this Bill becomes law these persons and their families would be lost as possible private patients for the general practitioners who did not happen to hold club appointments. On the other hand, it is impossible in Austria to bring about an organisation of medical men which would be in a position to dictate terms to the Krankenkassen. In the discussion it was shown that in this country there are about 2000 medical men who are not earning enough to live upon, and they would be the first to suffer if the Bill should be passed, as then their income would be cut off entirely. Another point much discussed was the Bill dealing with a modification of the existing Health Act. A resolution was passed in which the meeting expressed strong disapproval of the modification, because it was drafted without asking the opinion of the Aerztekammern, and was, moreover, inconsistent with the interests of the medical profession. The chief points of controversy were the definition of the position of the practitioner relatively to the officer of health, payment for notification of infectious diseases, the method of taxing medical incomes, and the right of private practice by holders of State appointments. The law dealing with quackery was also an item on the programme of the discussion. In Austria the law is not satisfactory on this point, and "nature-healing" is in great favour among certain classes of the population. The following resolution was adopted by the meeting and recommended to the Ministry of Justice as suitable for a satisfactory basis :—

> Whosoever undertakes, without possessing a regular Austrian diploma of M.D. or a recognised equivalent diploma of a foreign university, the medical treatment of any person or persons with or without payment or fee shall be guilty of a breach of the law. Nevertheless, when an imminent danger is threatening the life of the affected person, a non-qualified person may interfere in a medical sense. The punishment of such a breach of the law shall not be less than one month and not more than three months' imprisonment for each offence.

The position of the practitioner towards his patient was also a subject of discussion. The existing law does not provide any special privilege or immunity for a medical man in reference to any particular form of treatment. Until a short time ago operative interference was regarded as quite justifiable if the practitioner thought it necessary, but in several recent instances the Chief Court of Austria has decided that an operation, or an extension of an operation, performed without the special (and perhaps even the written) consent of the patient may form the basis of a claim for damages against the surgeon. In certain circumstances the law requires a medical man to break some statute, such, for instance, as that relative to professional secrecy. An example of this kind was mentioned in this column on June 19th. The meeting decided to present a petition to Parliament praying that the Bill may be modified so that legitimate professional work shall not bring a practitioner into conflict with the law. Some important questions were raised in connexion with the title of specialists. A movement is on foot in this country to regulate the assumption of medical titles and to permit only actual holders of university titles to use them in their scientific publications and on their door-plates. On the same principle, consulting physicians, *privat-docenten*, and professors would be required to confine themselves to consulting practice, and no practitioner would call himself or allow himself to be called a specialist unless he practised only in his special branch and could prove that he has had special training in this branch for at least a year at a recognised clinic or hospital. Local requirements should be considered in the instances where a combination of two or more special branches of medical practice in one practitioner were necessary. Naturally, there was a certain amount of opposition manifested against all these proposals, especially against the last-named one; but still, the proceedings of the Aerztekammertag showed that much good work could and would be done by these meetings; and already the power of this organisation of medical corporations is making itself felt by the newspapers which champion the cause of the Krankenkassa, for the medical profession in general is obviously dissatisfied with the salaries and other conditions offered by the sick-clubs.

Dec. 13th.

Obituary.

WILLIAM BRAMWELL RANSOM, M.A. CANTAB., M.D., B.SC. LOND., F.R.C.P. LOND.,

SENIOR PHYSICIAN TO THE NOTTINGHAM GENERAL HOSPITAL; PHYSICIAN TO THE SHERWOOD FOREST SANATORIUM FOR CONSUMPTION, ETC.

THE name of Ransom, held by father and son, is not only a household word in Nottingham, but is widely known in the medical world outside that city. Dr. William Bramwell Ransom, the subject of this memoir, commenced practice in the city of his birth in 1890, and shortly afterwards was appointed physician to the Nottingham General Hospital on the resignation of his father. Only two and a half years have elapsed since Dr. W. H. Ransom, F.R.S., passed away full of years and honours, and now on Dec. 9th his no less gifted son has been called from his unfinished work at the untimely age of 48 years, deeply mourned by a large circle of friends and patients.

Educated in the most liberal manner for the high calling he was destined to pursue, Dr. Ransom already manifested in his boyhood and as a scholar at Cheltenham College those gifts, so conspicuous in after life, which education can but foster and cannot create. From Cheltenham at the age of 17 he went as a student, as his father had done before him, to University College, London. In 1882, being now 21, he headed the list in physiology honours at the Final B.Sc. Lond., carrying off the University scholarship and medal. He had already in 1880 entered at Trinity College, Cambridge, and in 1883 graduated as a B.A., taking first-class honours in the natural science tripos. On account of his great interest in physiology he was sent by the University to do original work at the Zoological Station at Naples, and at a similar institution at Roscoff in Brittany. As a result of this work he published articles on "The Cardiac Rhythm of Invertebrata," "The Influence of Glycerine on the Liver" (*Journal of Physiology*, Vols. V. and VII.), "The Spinal and Visceral Nerves of Cyclostomata," and other papers well known to physiologists.

In 1886 he was elected Fellow of Trinity College, Cambridge, among the highest distinctions to be obtained at the University of Cambridge, and certainly one of the most difficult to get. Having returned to University College, London, to study medicine, he gained two Fellowes medals for clinical medicine, the Liston medal for pathology, and graduated M.B. Lond. in 1888. After a year's post-graduate study in London, Vienna, and Halle, he took the M.D. in 1889. In the following year he became a Member of the Royal College of Physicians of London, and the same College recognised his excellent abilities by electing him to the Fellowship in 1898. No sooner had Ransom settled in Nottingham than it was felt, not only among the medical profession, but by everyone with whom he came in contact, that a new power had arisen in the place. On the boards of charities and other committees he at once showed an insight into difficult problems which astonished men of more years and experience. Whenever he spoke he was attentively listened to, and his weighty words were always delivered with grace and ease of style, and not without drawing upon a fund of real humour. In these circumstances it cannot be wondered at that his consultant practice in the city and county spread rapidly. He early recognised that purely medical practices could not be expected to be as large as formerly, on account of the ever-increasing developments of surgery and of specialism, but his own limitations were wide, for he was always an exceedingly busy and even an over-worked man. He was popular alike with patients and practitioners; to the former he was invariably kind and sympathetic, and to the latter courteous and very

helpful. His admirable memory and reasoning powers sometimes made the diagnosis of a case which had appeared difficult to others a matter of instinct, yet he had none of the arrogance of intellect. He must have seen something of the mistakes of others, yet he never did or said anything calculated to disturb the relations of doctor and patient. "I never wish to meet a nicer or a fairer man in consultation"—this is not a mere commonplace of *nil nisi bonum* type, but has been said of Ransom scores of times during his life.

Shortly after he commenced practice Dr. Koch announced the discovery of tuberculin. Ransom's untiring energy was shown by his making a special journey to Berlin to obtain at first hand a supply of the new specific. Its effects were afterwards demonstrated to the medical profession in the wards of the General Hospital by himself and his colleagues. For 17 years, until finally struck down by illness, he was the constant and devoted servant of that institution. For years he spent the whole of his Sunday mornings in the wards, besides numerous visits on week-days. Add to this five or more long hours for out-patients on Friday afternoons, and some conception can be formed of the work he forced himself to do, instead of allowing some space for rest and recreation. He never had a strong physique, and the enormous amount which he got through was a continual triumph of mind over matter. He was not only keen in acquiring but generous in imparting knowledge. On those Sunday morning visits he was frequently accompanied by a small but earnest band of men to whom he expounded his science with ungrudging patience, while for years he lectured to nurses with an earnestness which others keep for academic addresses. No matter what the occasion, he always gave of his best—*Nil tetigit quod non ornavit*. His relations with his honorary colleagues and with the resident medical and nursing staffs were always of the most cordial description. In addition to the General Hospital he was also a member of the honorary staff of the Nottingham and Notts Convalescent Homes, to which institution he rendered valuable service by advising on medical, hygienic, and administrative matters.

In 1892, when the British Medical Association met in Nottingham, W. B. Ransom was secretary of the Section of Medicine, his father being President. He also took part in the Leicester meeting in 1905. The British Association for the Advancement of Science met in Nottingham in 1893, Ransom being one of the secretaries. He was a governor of the Nottingham High School and a member of the council of the Nottingham University College. He was President of the Nottingham Medico-Chirurgical Society during the session 1896-97, and on that occasion delivered a masterly address on "Immunity to Disease," which was published in full in THE LANCET. He was a frequent contributor of valuable clinical and pathological material to this society. Year after year he delivered set addresses, and however long these might be he possessed the happy art of keeping his audience interested to the end. No matter what the subject—"Should Milk be Boiled?"; "The Prevention of Tuberculosis"; "Pernicious Anæmia"; "Experiments on Animals"; "Infantilism"; "Modern Views on the Nervous System"; and many more—all were treated in the same exhaustive manner, it being a wonder to all how he obtained his knowledge. When he opened a discussion on Diet on Dec. 5th, 1906, there seemed to be no diminution in the familiar energy of manner or depth and facility of treatment. Yet that was the last occasion on which his voice was to be heard within the four walls so often the silent witnesses of his eloquence.

Ransom threw himself heart and soul into the question of the open-air treatment of phthisis, which began to be strongly advocated in Great Britain about the year 1898. By his untiring labours and great enthusiasm a society for the prevention of consumption was formed. A lasting monument to those labours remains in the form of the Sherwood Forest Sanatorium. By his own generous and self-sacrificing efforts a building fund of over £5000 was collected, a site having been provided by the munificence of the Duke of Portland. It is no easy matter in these days to start a new medical charity, and it is not too much to say that this sanatorium owes its existence to the unstinted efforts of Ransom in arousing the necessary enthusiasm. He possessed a unique combination of gifts which alone could make such an effort successful. The sanatorium was opened for 14 patients, all of the poorer class. This beneficent work has been brought within reach of an ever increasing number of patients, 32 of whom are now accommodated in the sanatorium.

Ransom contributed a number of articles to medical literature, many being of permanent value, in addition to those already referred to. Among these the following may be mentioned: "A Case of Actinomycosis" (Transactions of the Royal Medical and Chirurgical Society, 1892); "Some Cases of Cerebral Disease" (THE LANCET, 1893); "A Case of Actinomycosis of the Orbit, with a Summary of Seven Other Cases of Actinomycosis" (*British Medical Journal*, 1896); "A Case of 'Intestinal Sand'" (*Quarterly Medical Journal*, 1892); "Two Cases of Acromegaly" (*British Medical Journal*, 1895); "Immunity to Disease" (THE LANCET, 1896); "Case of Tumour of the Spinal Dura Mater" (*British Medical Journal*, 1894); "Syringomyelia" (*Journal of Pathology*, Vol. XI.); "A Case illustrating Kinæsthesis" (*Brain*, 1892); "Tumours of the Corpus Callosum" (*Brain*, 1895); "Phthisis in Relation to Life Insurance" (1900); "The Medical Man as Expert" (THE LANCET, 1905); "Plumbism from Ingestion of Diachylon as an Abortifacient" (with Dr. Arthur Hall, THE LANCET, 1906); "The Vis Medicatrix Naturæ" (presidential address, Nottingham Naturalists' Society). This is by no means a complete list of his published writings, but it will serve to illustrate his indefatigable industry and the wide range and many-sided interest of his observations. By a strange irony of fate Dr. Ransom fell a victim to the disease—consumption—which he had done so much to relieve. During the later years of his life he contracted several severe attacks of influenza. Definite symptoms of phthisis showed themselves in the summer of 1907 and the disease proved fatal about two and a quarter years later.

He married in 1898 a daughter of Mr. George Fowler of Basford Hall. She and their three children survive him.

Dr. Henry Head writes: "I first knew William Bramwell Ransom in the year 1880 when we entered together at Trinity College, Cambridge. He had already received a considerable scientific training at University College, London, where he attended Professor Lankester's lectures. He was intensely enthusiastic for both comparative anatomy and physiology, and at the end of his first year became a major scholar of his college. After taking his degree with first-class honours in the second part of the Natural Science Tripos (1883), he went to Naples and worked at the action of the heart in the cuttle-fish and other allied animals. On this work he obtained a Fellowship at Trinity College, and then entered strenuously on his medical studies at University College Hospital. Here he held all the ordinary junior appointments and was house physician to Dr. Ringer. He returned to Nottingham about the year 1890, and the rest of his career is better known to others than to me. In his earlier days he was always known to us for his vivacity and for the agility of his intellect. In our debates, whether in the laboratory, the hospital, or the natural science club, he was distinguished for the extraordinary accuracy of his knowledge over an unusually wide range. He had been brought up in an atmosphere of natural history and had been taught by his father to observe the phenomena of nature. To this had been added a superb zoological training which gave him an unusually wide range for so young a man. His power of interesting himself in new medical subjects was the outcome of his agile mind, and I know no man who could put forward so luminous and accurate an account of some recent advance in medicine in which he had interested himself. Unfortunately the last years of his life were haunted by perpetual ill-health which lowered his vitality and made the work that he had previously loved a heavy tax on his failing strength."

GEORGE FREDERICK BERGIN, M.B. LOND., L.R.C.P. LOND., M.R.C.S. ENG.

Dr. G. F. Bergin, who died at his residence, 1, York Buildings, Clifton, on Dec. 7th, in his forty-fifth year, was the eldest son of Mr. G. F. Bergin, the honorary director of Müller's Orphanages, Bristol. He received his medical education at the Bristol Medical School, where he obtained the Martyn and also the Sanders Scholarships. Dr. Bergin also studied at Guy's Hospital. He qualified L.R.C.P. Lond. and M.R.C.S. Eng. in 1889, and graduated M.B. of the University of London in 1893. After holding some resident appointments at the Bristol General Hospital Dr. Bergin decided to go to China

as a medical missionary. He contracted malarial fever there, and, Bright's disease following, his health was completely broken, and he returned home about ten years ago. Dr. Bergin was afterwards strong enough to take part in the work at Müller's Orphanages, and his tact and judgment were most useful in the management of this large institution. Dr. Bergin was highly respected and his early death is much regretted. The funeral, which took place on Dec. 10th at Arno's Vale Cemetery, Bristol, was very largely attended.

MARK FARRANT, L.R.C.P. LOND., M.R.C.S. ENG., D.P.H.

Mr. Mark Farrant died at his residence in Exeter on Nov. 28th in his thirty-ninth year. He received his medical education at the Westminster Hospital, and qualified L.R.C.P. Lond. and M.R.C.S. Eng. in 1893. Mr. Farrant joined his uncle in practice at Exeter, and in 1896 was elected medical officer of health for the St. Thomas rural district. Mr. Farrant was also medical officer and public vaccinator for the St. Thomas district of the St. Thomas (Exeter) board of guardians, but had resigned his appointments some months ago owing to failing health. He was very popular in Exeter and took a great deal of interest in the political life of the "ever faithful city."

ROYAL SOCIETY OF MEDICINE: A SPECIAL MEETING OF THE FELLOWS; THE ANNUAL DINNER.

A LARGELY attended meeting of the Fellows of the Royal Society of Medicine was held at Hanover-square on Dec. 15th to discuss an important scheme which had been brought forward by the Council of the Society, on the recommendation of the House and Finance Committee, with the object of raising £60,000 to enable the society to build a new home for itself. The particular scheme put forward was rejected by a large majority, but the result of the meeting was to show an absolute consensus of opinion that the Royal Society of Medicine was inadequately housed and ought to take steps at an early date to remedy the position. Although the meeting rejected the scheme put forward by the House and Finance Committee, the pains at which that committee had been to arrive at a solution of some great practical difficulties were recognised, and the thanks of the society were expressed to them, and especially to Dr. Arthur Latham for the very large amount of time and trouble expended in considering the matter.

The annual dinner of the society was held in the evening at the Hotel Cecil, Strand, Sir William Church, President of the Society, being in the chair. Nearly 200 sat down, and the guests included Lord Strathcona; Sir Archibald Geikie, President of the Royal Society; Sir R. Douglas Powell, President of the Royal College of Physicians of London; Mr. Butlin, President of the Royal College of Surgeons of England; Dr. James Porter, Medical Director-General of the Naval Medical Service; Lieutenant-Colonel Sir Arthur Keogh, retired Director-General of the Army Medical Staff; Dr. P. W. Latham; Mr. A. W. Aston, Master of the Skinners' Company; General Sir Lionel Spencer; Dr. Macnaughton Jones; Dr. Samuel West, President of the Medical Society of London; and Dr. Squire Sprigge, Editor of THE LANCET.

The toast of "The Royal Society of Medicine" was given by Sir ARCHIBALD GEIKIE, who in sympathetic terms congratulated the Society on its success in gathering together so many different constituents under one roof, and admitted that the time might soon come when the Royal Society itself would have to adopt some such amalgamation scheme.

Sir WILLIAM CHURCH, in replying, referred to the scientific work of the society during the year as being eminently satisfactory, the discussion on Heredity held having been especially important. The library had been attended by 8564 readers during the year, and nearly 8000 books had been borrowed from the library. The society now numbered 2328 Fellows and 991 Members. The expenses of publication were very great, however, and he suggested that the reports of the proceedings of the society might often be curtailed with advantage.

Dr. NORMAN MOORE proposed the health of the guests "in historical sequence," alluding in a speech full of bright and happy allusions first to Lord Strathcona's position as a Privy Councillor, or member of the Magnum Concilium which existed before Kings, Lords, or Commons were instituted; next to Mr. Aston, as representative of the ancient City of London; next to Dr. James Porter and Sir Alfred Keogh, representing services that had their origin before the days of the Normans, "when most things seem to have begun"; and then to the Royal Colleges; and to THE LANCET, concerning the breadth of whose interests he told a flattering story.

Mr. BUTLIN, in responding, said he hoped that the Royal Society of Medicine would have a home worthy of its great position to show to the distinguished strangers who will visit London at the next International Congress of Medicine.

After Sir RICHARD DOUGLAS POWELL had proposed the toast of "The Chairman," Sir WILLIAM CHURCH, in reply, said that already a building fund had been started.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the Final Examination for the Fellowship in Surgery, Surgical Anatomy, and Pathology, held on Nov. 22nd, 25th, 26th, 27th, 29th, and 30th, 1909, 72 candidates presented themselves, of whom 30 were approved and 42 were rejected. Among the successful candidates were two gentlemen (John Henry Farbstein, M.B., B.S. Lond., L.R.C.P., M.R.C.S., University College Hospital, and Shamrao Ramrao Moolgaokar, L.R.C.P., M.R.C.S., Bombay University and King's College Hospital) who have not yet attained the requisite age of 25 years. The Council accordingly conferred the Diploma of Fellow upon the 28 gentlemen mentioned below, who have complied with the necessary by-laws:—

John William Geary Grant, L.R.C.P., M.R.C.S., St. Thomas's Hospital; David Leighton Davies, M.D., M.S. Lond., L.R.C.P., M.R.C.S., University College Hospital; Hugh Bernard Willoughby Smith, M.B. Lond., L.R.C.P., M.R.C.S., London Hospital; William Square Edmond, L.R.C.P., M.R.C.S., St. Bartholomew's Hospital; Walter Goldie Howarth, M.B., B.C. Cantab., L.R.C.P., M.R.C.S., Cambridge University and St. Thomas's Hospital; Arthur Donald Griffith, M.B., B.S. Lond., L.R.C.P., M.R.C.S., King's College Hospital; Francis Rudolph Hotop, M.B., B.Ch. New Zealand, L.R.C.P., M.R.C.S., New Zealand University and King's College Hospital; Arthur Sydney Blundell Bankart, B.C. Cantab., L.R.C.P., M.R.C.S., Cambridge University and Guy's Hospital; James Ernest Helme Roberts, M.B., B.S. Lond., L.R.C.P., M.R.C.S., Birmingham University and St. Bartholomew's Hospital; Henry Sessions Souttar, M.A., M.B., B.Ch. Oxon., L.R.C.P., M.R.C.S., Oxford University and London Hospital; John Prescott Hedley, M.B., B.C. Cantab., M.R.C.P., M.R.C.S., Cambridge University and St. Thomas's Hospital; Walter Rowley Bristow, M.B., B.S. Lond., L.R.C.P., M.R.C.S., St. Thomas's Hospital; Rustom Nusserwan Coorlawala, L.M. & S. Hyderabad, D.P.H. Cantab., L.R.C.P., M.R.C.S., Hyderabad and London Hospital; Alfred Basil Rooke, L.R.C.P., M.R.C.S., University College Hospital; Ardeshir Pestonji Bacha, L.M. & S. Bombay, M.B., B.S. Lond., L.R.C.P., M.R.C.S., Bombay University and University College Hospital; Richard Lionel Spittel, L.R.C.P., M.R.C.S., Ceylon Medical College and London Hospital; Manchersha Dhanjibhai Dorabji Gilder, M.B., B.S. Lond., L.R.C.P., M.R.C.S., Bombay University and University College Hospital; Gopal Vinayak Deshmukh, L.M. & S. Bombay, M.B., B.S. Lond., L.R.C.P., M.R.C.S., Bombay University and London Hospital; Wilfrid Warwick Treves, B.A., B.C. Cantab., L.R.C.P., M.R.C.S., Cambridge University and London Hospital; James Johnston Abraham, M.D. Dub., Dublin University and London Hospital; Andrew Blair Aitken, M.B., Ch.B. Glasg., Glasgow University and London Hospital; Henry Graeme Anderson, M.B., Ch.B. Glasg., Glasgow University and London Hospital; Alfred Gough, M.B., Ch.B. Leeds, Leeds University; Francis Frederick Muecke, M.B., B.S. Adelaide, Adelaide University and London Hospital; Malcolm Leslie Scott, M.B., Ch.B. Adelaide, Adelaide University and London Hospital; Ambrose Spong, M.B., Ch.B. Vict., Leeds University and London Hospital; Hubert Gordon Thompson, M.D., Ch. B. Liverp., Liverpool University; Albert Samuel Worton, M.D. Glasg., Glasgow University, Middlesex and St. Bartholomew's Hospitals.

Licences to practise dentistry were also conferred upon the following 36 gentlemen, who have passed the necessary examinations and complied with the by-laws:—

Richard Guy Ash, Charing Cross and Royal Dental Hospitals; Reginald John Bailey, Middlesex and Royal Dental Hospitals; Guy Capper Birt, St. Thomas's and Royal Dental Hospitals; Charles Ernest Blows, Charing Cross and Royal Dental Hospitals; Cecil Hastings Bradnam, Guy's Hospital; Harry Fielden Briggs, M.D., L.A.H., L.D.S., Glasgow, D.D.S. Michigan, Michigan and Bristol Universities; Charles Edward Brown, Liverpool University; Frank Bocquet Bull, Guy's Hospital; Eric Horsfall Chesters, Birmingham University; Leonard Dinnis, Charing Cross and Royal Dental Hospitals; Cecil Lucas Donne, Middlesex and National Dental Hospitals; Lionel David Frühauf, Charing Cross and Royal Dental Hospitals; John Daniel George, Guy's Hospital; Bernard Goldsmith, Middlesex

and National Dental Hospitals; Arthur Rusby Hawksley, Liverpool University; George Theodore Douglas Hughes, Liverpool University; Percy Stanley Humm, Guy's Hospital; Leonard John Kemp, Guy's Hospital; William Caffyn Miller, Guy's Hospital; Cecil Graves Morris, Guy's Hospital; Walter Cecil Murray, Charing Cross and Royal Dental Hospitals; James Ormrod, Liverpool University; Percy Hills Orton, Guy's Hospital; Alfred Bunce Plank, Liverpool University; John Morley Pomeroy, Guy's Hospital; Reginald Wood Powell, Guy's Hospital; Arthur Pusey, Middlesex and National Dental Hospitals; George Hubert Walter Randell, Middlesex and National Dental Hospitals; John Roberts, Guy's Hospital; Bertram Charles Salter, Charing Cross and Royal Dental Hospitals; John Henry Skerritt, Sheffield University; Theodore Victor Smith, D.D.S. Penn., Pennsylvania University and Charing Cross Hospital; Stanley Runton Storey, Charing Cross and Royal Dental Hospitals; Norman Healea Swallow, Manchester University; Herbert Thornton, Guy's Hospital; and Henry Alfred Woodhouse, M.A. Oxon., Middlesex and Royal Dental Hospitals.

UNIVERSITY OF OXFORD.—The following candidates have been approved in the undermentioned examinations:—

FIRST B.M. EXAMINATION.

Organic Chemistry.—H. E. A. Boldero, Trinity College; C. H. Carlton, St. John's College; F. B. Chavasse and W. T. Collier, Balliol College; L. M. Davies, Lincoln College; J. C. Dixey, Brasenose College; K. M. Dyott, non-collegiate; V. T. Ellwood, Pembroke College; L. Gameson, Queen's College; O. H. Gotch, New College; W. J. Hart, B.A., Queen's College; J. W. Horan, Brasenose College; M. R. Lawrence, B.A., St. John's College; P. A. Martin, New College; T. S. Nelson, University College; A. L. Pearce-Gould, B.A., Christ Church; E. Scott, B.A., St. John's College; G. P. Selby, New College; N. A. Sprott, Christ Church; and C. P. Symonds, New College.

Human Anatomy and Human Physiology.—W. H. Bleaden, B.A., Brasenose College; A. Booth, B.A., Keble College; A. Jackson, Queen's College; E. E. Mather, Exeter College; H. G. Morris, B.A., University College; H. M. Pope, B.A., Lincoln College; M. O. Raven, Trinity College; and J. Sainsbury, Oriel College.

SECOND B.M. EXAMINATION.

Pathology.—G. E. Downs, B.A., Magdalen College; A. D. Gardner, B.A., University College; G. W. Johnson, B.A., Brasenose College; C. Newcomb, B.A., St. John's College; E. L. Pearce-Gould, B.A., Christ Church; and A. F. S. Sladden, B.A., Jesus College.

Forensic Medicine and Public Health.—R. F. Bridges, B.A., University College; G. H. Hunt, B.A., Christ Church; S. F. Moore, B.A., Trinity College; H. P. Newsholme, B.A., Balliol College; and A. F. S. Sladden, B.A., Jesus College.

Medicine, Surgery, Midwifery.—F. J. Aldridge, B.A., Magdalen College; H. G. Butterfield, B.A., Wadham College; G. H. Cross, B.A., Balliol College; D. C. Dobell, B.A., Christ Church; G. J. Z. Jessel, B.A., University College; S. F. Moore, B.A., Trinity College; C. Newcomb, B.A., St. John's College; and H. P. Newsholme, B.A., Balliol College.

SOUTH AMERICAN MEDICAL CONGRESS.—An International Congress of Medicine and Hygiene is arranged to be held at Buenos Ayres in 1910. The opening day is May 25th.

DR. MOSNY has been elected a member of the Academy of Medicine of Paris. The candidates who were placed second and third on the list, but a long way behind Dr. Mosny, were M. Lemoine and M. Vallon.

THE SEWERAGE OF OKEHAMPTON (DEVON).—A Local Government inquiry was held last week at Okehampton in reference to the application of the local town council for sanction to borrow £4300 for sewerage and sewage disposal works.

PLAGUE IN INDIA.—In all India during the week ending Nov. 6th there were 5725 cases of plague, resulting in 4479 deaths. The deaths in the provinces were as follows: Bombay, 850; Madras, 104; Bengal, 89; United Provinces, 918; Punjab, 697; Burma, 19; and Central Provinces, 950. The mortality in the preceding week was 3456.

SANITARY INSPECTORS UNDER PUBLIC HEALTH (LONDON) ACT, 1891.—Examinations recognised by the Local Government Board under the above Act will be held at the Examination Hall, Victoria Embankment, London, W.C., commencing Tuesday, Jan. 18th, 1910. For particulars application should be make to the Honorary Secretary, The Sanitary Inspectors Examination Board, 1, Adelaide Buildings, London Bridge, London, E.C.

UNIVERSITY OF CAMBRIDGE.—The special board for biology and geology has appointed Mr. A. E. Shipley, M.A., Christ's, to be a manager of the Balfour Fund. The general board of studies has appointed Mr. J. E. Purvis, M.A., St. John's, to be University Lecturer in Chemistry and Physics in their application to Hygiene and Preventive Medicine for five years. This appointment has been confirmed by the special board for medicine.

BOOKS, ETC., RECEIVED.

ENGELMANN, WILHELM, Leipzig.

Uber die Palliativtrepanation bei Stauungspapille. Von Eugen von Hippel. Price M.3.40.

Nach Diagnosen geordnetes Register für Augenärzte. Von Dr. med. Georg Hirsch. Mit einem Vorwort von Prof. Dr. A. Bielschowsky (in German, French, and English languages). Price M.7.

FISCHER, GUSTAV, Jena.

Die Cholelithiasis. Von L. Aschoff und A. Bacmeister. Price M.20.

Pathologie und Therapie der Gonorrhoe. In Vorlesungen. Ein Lehrbuch für Aerzte und Studierende. Von Dr. W. Scholtz. Zweite erweiterte und umgearbeitete Auflage. Price, paper, M.4.50; bound, M.5.50.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

Oxford Medical Publications. Constipation and Allied Intestinal Disorders. By Arthur F. Hertz, M.A., M.D. Oxon., M.R.C.P. Price 10*s.* 6*d.* net.

HIRSCHWALD, AUGUST, Berlin.

Compendium der Operationslehre. Von Dr. Eduard Sonnenburg und Dr. Richard Mühsam. Zweite Auflage. Price M.9.

Internationale Beiträge zur Pathologie und Therapie der Ernährungsstörungen, Stoffwechsel- und Verdauungskrankheiten. Redaktion: A. Bickel, Berlin. Erster Band. Erstes Heft. Ausgegeben am 16, November, 1909. Price M.3.

KARGER, S., Berlin.

Anleitung zur Diagnostik der Abdominaltumoren unter Zugrundlegung der Palpation. Eine klinische Erläuterung zur Palpation des Abdomens. Von Prof. Dr. G. L. Sacconaghi. Nach der italienischen, vom Autor verbesserten Ausgabe übersetzt von Dr. V. Plitek. Mit einem Vorwort von Professor Dr. C. v. Noorden. Price, paper, M.12; bound, M.13.60.

Die Krankheiten der Nase und des Nasenrachens, mit besonderer Berücksichtigung der rhinologischen Propädeutik. Von Dr. Carl Zarniko. Dritte, neu bearbeitete Auflage. Price, paper, M.18.; bound, M.19.60.

Die Epilepsie im Kindesalter, mit besonderer Berücksichtigung, erzieherischer, unterrichtlicher und forensischer Fragen. Dargestellt von Professor Dr. med. Heinrich Vogt. Price, paper, M.5.; bound, M 6.20.

Jahrbuch für Kinderheilkunde und Physische Erziehung. Unter Redaktion von O. Heubner, A. Steffen, und Th. Escherich. 70. der dritten Folge 20, Band. Heft 6. Ausgegeben am 2. Dezember, 1909. Price not stated.

KLINKHARDT, Dr. WERNER, Leipzig.

Jahresbericht über die Fortschritte der Inneren Medizin im In- und Auslande. Redaktion: Dr. Schreiber und Dr. Rigler. Bericht über die Jahre 1902 und 1903. II. Band. Price M.30. Bericht über das Jahr, 1908. II. Band. Price M.20.

Die Pathologie und Therapie der Lepra. Von Wilhelm Ebstein, Dr. und o.ö. Professor der Medizin. Price, paper, M.3.50; bound, M.4.20.

LAURIE, T. WERNER, London.

The Cathedrals and Churches of Belgium. By T. Francis Bumpus. Price 6*s.* net.

SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.

Social Disease and its Prevention. By H. N. Robson, M.R.C.S. Eng., L.R.C.P. Lond. Second edition. Price 3*s.* 6*d.* net.

THIEME, GEORG, Leipzig.

Die Gonorrhoe des Mannes und ihre Komplikationen. Von San.-Rat. Dr. Hans Wossidlo. Zweite umgearbeitete Auflage. Price M.12.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. (SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.) (WOOD, WILLIAM, AND CO., New York).

Urgent Surgery. By Félix Lejars, Professeur Agrégé à la Faculté de Médecine de Paris. Translated from the Sixth French Edition by William S. Dickie, F.R.C.S. Vol. I. Introductory—Head—Neck—Chest—Spine—Abdomen. Price 25*s.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

AHERN, RICHARD, M.B., B.S. R.U.I., D.P.H. Camb., has been appointed Resident Medical Superintendent of the Cork County and City Sanatorium.

ARCHER, T. C. R., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Eye Department at St. Thomas's Hospital.

BENTLEY, A. J. M., M.D., C.M. Edin., has been appointed Lecturer in Tropical Diseases in the University of Manchester.

CHILD, W. N., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Surgical Children's Department at St. Thomas's Hospital.

CHOLMELEY, M. A., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Assistant Medical Officer to the Royal Cornwall Infirmary.

COLDICUTT, CLAUDE E. A., M.D. Edin., has been appointed Assistant Medical Officer of Health of the County Borough of Leicester.

DELLSCHAFT, M. E., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Ear Department at St. Thomas's Hospital.

DESPREZ, HENRY SOULBIEU, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer by the Okehampton (Devon) Board of Guardians.

EARLE, H. G., B.A. Cantab., has been appointed Joint Lecturer in Biology at Middlesex Hospital Medical School.

ENGLISH, THOMAS CRISP, M.B., F.R.C.S., has been appointed Surgeon (Non-obstetric) to Queen Charlotte's Lying-in Hospital.

FYFFE, E. L., M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Senior Obstetric House Physician at St. Thomas's Hospital.

GEORGE, WILLIAM, M.B., Ch.B. Vict., has been appointed Honorary Anæsthetist to the Royal Lancaster Infirmary.

GRAHAM-JONES, J. L., M.R.C.S., L.R.C.P. Lond., has been appointed Junior Obstetric House Physician at St. Thomas's Hospital.

HOPWOOD, J. S., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Ear Department at St. Thomas's Hospital.

HUMPHRYS, H. E., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Skin Department at St. Thomas's Hospital.

HUNTER, G. F., M.B. Aberd., has been appointed Junior Assistant Physician to the Ayr District Asylum.

MCDOUGALL, M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer for the No. 2 District of Southampton.

MACINTYRE, DAVID D. F., M.B., Ch.B. Glasg., has been appointed Medical Officer to the Board of Trade at Liverpool.

MARKLOVE, J. C., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Skin Department at St. Thomas's Hospital.

MAYBURY, B. C., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Throat Department at St. Thomas's Hospital.

MAXWELL, R. D., M.D. Lond., F.R.C.S. Eng., has been appointed a Physician to Out-patients at Queen Charlotte's Lying-in Hospital.

MEAKIN, L., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the X Ray Department at St. Thomas's Hospital.

MORCOM, A. F., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Throat Department at St. Thomas's Hospital.

MURRAY, CHARLES, M.A., M.D., D.P.H. Aberd., has been appointed Senior Assistant Medical Officer of Health and Schools Medical Officer for the County of Dumfriesshire.

PARKINSON, W. R., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Surgical Children's Department at St. Thomas's Hospital.

PRESCOTT, N., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Medical Officer at the Guest Hospital, Dudley.

PRIDHAM, F. C., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Medical Children's Department at St. Thomas's Hospital.

QUINE, A. E., M.B., Ch.B. Vict., has been appointed Senior Assistant Resident Medical Officer at the Whitechapel Union Infirmary.

ROUTH, L. M., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Medical Children's Department at St. Thomas's Hospital.

ROWNTREE, CECIL, M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Cancer Hospital.

SALISBURY, C. R., M.R.C.S., L.R.C.P. Lond., D.P.H., has been appointed Resident Medical Officer to the Central London District Schools at Hanwell.

WINK, C. S., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Mental Department at St. Thomas's Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House Surgeon. Salary £80 per annum and fees.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—House Surgeon. Salary £130 per annum, with board and residence.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—Third House Surgeon, unmarried. Salary £50 per annum, with apartments, board, and laundry.

BRISTOL ROYAL INFIRMARY.—Honorary Dental Anæsthetist.

BUXTON, WYE HOUSE ASYLUM.—Assistant Medical Officer. Salary £120 per annum, all found.

CANCER HOSPITAL, Fulham-road, S.W.—Assistant Anæsthetist. Salary 25 guineas per annum.

CHARTHAM, KENT COUNTY ASYLUM.—Third Assistant Medical Officer. Salary £145 per annum, with board, quarters, attendance, and washing.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant.

DERBYSHIRE ROYAL INFIRMARY.—Two House Surgeons, a House Physician, and an Assistant House Surgeon. Salaries of three former £100 per annum, and of latter at rate of £60 per annum, with apartments, board, &c.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, &c.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Physician. Salary at rate of £75 per annum, with board and residence.

EDMONTON UNION INFIRMARY, Bridport-road, Upper Edmonton.—Resident Medical Superintendent. Salary £400 per annum, with unfurnished apartments, fire, light, and water.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, London, S.E.—House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and washing. Also Ten Clinical Assistants in the Out-patient Departments.

FARRINGDON GENERAL DISPENSARY AND LYING-IN CHARITY, Bartlett's Buildings, Holborn-circus, E.C.—Honorary Physician.

GREENOCK INFIRMARY.—Assistant House Surgeon. Salary £40 per annum, with board and residence.

GRIMSBY AND DISTRICT HOSPITAL.—House Surgeon. Salary £120 per annum, with board, lodging, attendance, and washing.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with board, residence, and laundry.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with board and residence.

HEMEL HEMPSTEAD, WEST HERTS HOSPITAL.—House Surgeon. Salary £100 per annum, with rooms, board, and washing.

HÔPITAL FRANÇAIS, 172, Shaftesbury-avenue, W.C.—Second Resident Medical Officer, unmarried. Salary £50 per annum, with full board and laundry.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Surgeon, unmarried, for six months. Salary £30, with board and residence.

HULL ROYAL INFIRMARY.—Casualty House Surgeon. Salary at rate of £60 per annum, with board and lodging.

INDIAN MEDICAL SERVICE, India Office, London.—Thirteen Commissions in His Majesty's Indian Medical Service.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100 per annum, with board and lodging.

MANCHESTER CHILDREN'S HOSPITAL, Gartside-street.—Assistant Medical Officer. Salary £100 per annum.

MEDICAL MISSION HOSPITAL, Balaam-street, Plaistow, E.—Assistant Doctor (female) for six months. Board, residence, and laundry.

METROPOLITAN HOSPITAL, Kingsland road, N.E.—Dental Surgeon.

MIDDLESEX HOSPITAL MEDICAL SCHOOL.—Lecturer on Mental Diseases.

MONTREAL, ROYAL VICTORIA HOSPITAL.—Pathologist.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Physician.

NORTHAMPTON GENERAL HOSPITAL.—House Surgeon. Salary £90 per annum, with apartments, board, &c.

OXFORD UNIVERSITY.—Philip Walker Studentship in Pathology. Annual value £200.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

ROYAL EYE HOSPITAL, Southwark, S.E.—Honorary Assistant Surgeon.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, W.—Honorary Radiographer.

ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, City-road, E.C.—Three Clinical Assistants.

ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, Cavendish-square, W.—Honorary Surgeon. Also Honorary Medical Radiographer.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician. Salary £50 per annum, with board, lodging, and washing.

SOMERSET COUNTY EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £250 per annum, with expenses.

SOUTHAMPTON, FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician for six months. Salary £30, with board, lodging, and laundry.

WANDSWORTH UNION HOME FOR AGED AND INFIRM, Church-lane, Tooting.—Assistant Medical Officer. Salary £130 per annum, with apartments, lodging, and washing.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon, unmarried. Salary £75 per annum, with board, residence, and washing.

WEST LONDON HOSPITAL AND POST-GRADUATE COLLEGE, Hammersmith-road, W.—Clinical Assistants, Throat, Nose and Ear, Skin, and X Rays, Pathological Laboratory, &c.; and Three Casualty Officers.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon. Salary at rate of £80 per annum, with board, rooms, and laundry.

YARMOUTH COUNTY BOROUGH.—Medical Officer of Health. Salary £400 per annum.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Polmont, in the county of Stirling; at Littleport, in the county of Cambridge; at Westport, in the county of Mayo; and at Pewsey, in the county of Wilts.

Births, Marriages, and Deaths.

BIRTHS.

CAMPBELL.—On Dec. 11th, at Westwood, Brechin, N.B., the wife of Malcolm Campbell, M.A., M.B., F.R.C.S. Edin., of a son.

EYRE.—On Dec. 8th, at Holmsdale, Wandsworth Common, to Dr. and Mrs. Eyre, a son.

HOLLIST.—On Dec. 8th, at Riseley Lodge, Maidenhead, the wife of Gerald W. C. Hollist, M.R.C.S., a son.

LEE.—On Dec. 9th, at Muswell-rise, N., the wife of William Edward Lee, M.D., F.R.C.S., of a son.

STITT.—On Dec. 11th, at 16, Trinity-road, Bootle, Lancashire, the wife of Robert R. Stitt, School Medical Officer and Police Surgeon, of a son.

UPCOTT.—On Dec. 12th, at Hull, the wife of Harold Upcott, F.R.C.S., a son.

WOOD.—On Dec. 11th, at Woolpit, Suffolk, to Dr. and Mrs. Orby R. M. Wood, a daughter.

DEATHS.

CROSS.—On Dec. 13th, at Tangley Park, Worplesden, aged 59, Horace Edward Firmin Cross, R.N., Inspector-General of Hospitals and Fleets.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE CLASSIFICATION OF ODOURS.

To the Editor of THE LANCET.

SIR,—I have read with considerable interest Mr. Morris J. Williams's letter and your leading article on this subject. No doubt there is a considerable analogy between colour, sound, and odour, and some classification of the last based upon that which obtains in one of the two former is at any rate conceivable. Dr. S. Piesse takes sound and Mr. Williams colour as his basis, but both are met by the initial difficulty of the absence of an adequate terminology. It is pointed out in your leading article that in this respect odour differs from colour and sound, but I think that too much importance should not be attached to this difference. In all probability we owe our well recognised, though far from exact, terminology of colour to the fact that we have an example of colour graduations so frequently before our eyes in the rainbow and other phenomena of a similar character, where all the colours are vividly represented and accurately arranged according to wave length. But even here there are no words exactly denoting various shades of colour—only the larger distinctions are represented in language. To illustrate this perhaps I may be allowed to quote a passage from one of your contemporaries in which a despairing attempt is made to describe colour in accurate terms: "Greys will be prominent, from a soft elephant tone—to which, however, a *new name* will be attached—to a quite delicate pigeon breast. Blues will be smiled upon, and much care is being expended in producing these as cold as possible. They are blues without tone, so to say, and infinitely novel. Greens, saving only in fausse tints, are not greatly in evidence; in fact, the colour card throughout points to a falling back to indeciaive delicacy of tint. Meanwhile, Paris is declaiming loudly over the loveliness of flamme-voyant red with yellow lights in it, aptly likened to the rays of the setting sun" (*The Queen*, vol. cxxvi., Dec. 4th, 1909, p. 1022). With regard to sound, vibration frequency can, it is true, be expressed with approximate accuracy in the musical notation of our day, but, beyond this, comparison to a known sound or allusion to the emotions which a known sound can produce is all which can be attempted in words. If I may be permitted another illustration I would quote the well-known lines of Shelley in which he attempts to describe the notes of the skylark:—

> "All the earth and air,
> With thy voice is loud,
> As, when night is bare,
> From one lonely cloud
> The moon rains out her beams and
> heaven is overflowed."

Colour and sound, then, are not so very much better off than odour as regards an accurate terminology.

Mr. Williams's suggestion is ingenious, but I cannot think that the time has yet come for any classification at all. The dependence of odour on volatility (specific solubility in air), molecular weight, and chemical constitution is well recognised, and certain "osmophore" groups have been described. But beyond this little is known. Odour is not a force or mode of motion, and if due to vibrations these must be intra-molecular. There is some suggestion that this may be the case, as Professor Francis and I have elsewhere pointed out ("Chemical Basis of Pharmacology," p. 332), and until more is known as to these vibrations any attempt at classification can only be pigeon-holing and must fail to shew any scientific relationship between the bodies classified.

As a small instance of the difficulty which lies in the way of Mr. Williams's own classification I may mention that sulphuretted hydrogen is stated when pure to be devoid of odour (Georg Cohn: Die Riechstoffe, 1904).

With apologies for my somewhat diffuse remarks on this very interesting subject,

I am, Sir, yours faithfully,

J. M. FORTESCUE-BRICKDALE, M.A., M.D. Oxon.

Clifton, Bristol, Dec. 12th, 1909.

"DANES' SKINS" AND FLAYING.

THE west doors of churches have for ages been used as notice-boards. This was already the case when few could read and printing had not yet been invented. In the Middle Ages the church doors often exhibited notices or warnings in kind. Thus, our early Saxon forefathers are supposed to have occasionally affixed to the doors of their churches, especially in the eastern counties, the skins of Danes or Northmen whom they had caught red-handed in the act of plunder or sacrilege, and whom they had flayed alive. Numerous fragments of so-called "Danes' skins" are still in existence, and were at one time frequently visible on church doors. Thus Pepys, writing of April 10th, 1661, mentions that he observed the great doors of Rochester Cathedral, "as they say, covered with the skins of the Danes." In the newly opened historical cabinet of the Museum of the Royal College of Surgeons are three fine specimens of Danes' skins, presented by the late Mr. Albert Way, an authority on this subject. These are labelled, "Portion of human skin, said to be that of a Dane, from the door of the Church of Hadstock, Essex;" "Portion of human skin from the door of the Church of Copford, Essex;" and "Portion of human skin from the north door of Worcester Cathedral." These fragments are of an appreciable thickness—quite the tenth of an inch—and resemble small pieces of felt in appearance. The largest, which is from Copford, and measures about two inches by an inch and a half, is pierced by a nail-hole about half an inch wide, a fact which reminds us that large-headed nails, such as are still used on church doors, were driven through the skin in such a manner as not to interfere with the general design of the ironwork on the door. A piece of Hadstock skin was recently exhibited to the Cambridge Antiquarian Society by Alderman Deck. Commenting on this, the Proceedings of this society remark: "About seventy years ago the door of Hadstock Church needed repair, and under an iron bar nailed across the outside were found pieces of skin." The woodwork of this door is very ancient and shows marks of having been cut by a hatchet, but it is a question, in view of the systematic manner in which the skin was fastened to the door, whether it belonged to a Dane at all. Might it not rather be a relic of the human victim immolated when a temple was anciently built? The belfry or steeple of the early Saxon church might conceivably represent the Pagan temple, on the ruins of which many Christian places of worship were founded. The steeple was certainly a lay meeting-place up to a late date, and it was on the steeple door that the Danes' skins were mostly nailed.

Professor Quekett, who was the first to examine the Danes' skins under one of his powerful microscopes, was in favour of the belief in their Scandinavian origin. In or about 1854 he examined a piece of dark-coloured elastic skin, about the size of a half-crown, from the door of the church at East Thurrock in Essex. The explicit tradition of the locality was that the skin had been bolted on the church door, under an iron plate a foot square, as a warning to marauders, and that it had belonged to "a man who had come up the river and robbed the church." He is supposed to have been flayed alive by the Saxon villagers of the time, but, if so, and if they intended to exhibit his skin as a warning, one wonders why it was bolted down and hidden under a plate of metal. Without knowing anything about the East Thurrock tradition, Quekett pronounced the skin to be that "of a light-haired man, having the hair of a sandy colour."

The Worcester skin in the Museum of the Royal College of Surgeons was also pronounced by this great histologist to be "some part of the body of a light-haired person where little hair grows," and he gave much the same verdict in the case of the Hadstock skin. But light hair is no proof of Danish origin. In fact, this little square of Worcester skin is probably English, and is said to have belonged to a man who was flayed for stealing the sanctus bell from the high altar in Worcester Cathedral. The skin was nailed to the fourteenth-century woodwork of the north door of the Cathedral in the time of Richard II., but may have been transferred from an earlier door. There can be no doubt that in the early Middle Ages torture must have been almost scientifically practised and that the tortured must sometimes have come under medical treatment or observation. But for the victims of the gruesome practice of flaying there could have been little medical aid. They were bound to die. The practice seems to have taken a strong hold of the popular imagination and to have lingered long. Indeed, a case is recorded of a boy being flayed by villains as late as 1700 at Sharnford in Leicestershire. And talk of "skinning alive" still lingers in our slums and in the jargon of our gentle schoolboys.

At Lyons during the first French Revolution flaying is said to have been practised on the bodies of the guillotined. The fact is noticed by Mr. St. George Gray in his valuable notes on "Danes' Skins." The skins so procured were made into boots. At Meudon, according to Montgalliard, human skins were tanned and converted into good wash-leather. Thomas Carlyle speaks of breeches being made from the skins. The epidermis of the male was superior in quality and toughness to chamois; that of the women was so soft in texture as to be almost good for anything. In the case enclosing the Danes' skins at the Royal College of Surgeons is a piece of human skin tanned as leather and labelled in Clift's handwriting. It may very well have come from Lyons or Meudon.

TRAGIC INCIDENT IN OBSTETRIC PRACTICE.

UNDER date, Rome, Dec. 8th, an Italian correspondent writes: "Dr. Masetti, a well-known practitioner, and his colleague, Dr. Vecchi, who were recently called in just before midnight to attend a case of complicated labour, found the conditions of the patient such that, to save her life, craniotomy of the child had to be performed. Leaving his colleague in charge Dr. Masetti hurried home for special instruments, but on his return, having mounted many stairs on his journey to and fro, he was seen to suffer acutely from cardiac distress. With no time to lose, he at once applied himself to the operation, but had scarcely introduced the instrument when, with the exclamation, 'Dio! mi sento male' ('God! I feel ill'), he fell forward, overtaken with syncope. The poor patient, an intimate friend of Dr. Masetti, whom he had often attended in previous confinements, forgetting her own distress in his, looked anxiously on, a keenly interested spectator of the efforts made to bring him round. These proved quite unavailing; the good doctor after not many minutes breathed his last, and his colleague, Dr. Vecchi, on turning to relieve the lady found that she too, had already collapsed, involving in her own death the already doomed

life of her child. Dr. Masetti had long laboured under weak heart, and the anxiety, combined with the haste and the exertion in running to and fro between the patient's house and his own, had determined the attack to which he succumbed. The incident has evoked much sympathy far beyond the circles, professional and social, in which Dr. Masetti and his patient were known and esteemed."

HEALTH AND SANITATION IN TRINIDAD AND TOBAGO.

THE report on the Blue-Book of this colony for the year 1908–09 has been prepared by the Acting Colonial Secretary, Mr. W. M. Gordon, and is now published as a Parliamentary paper. The present population is estimated at 343,945. The number of births recorded in 1908–09 was 11,638, while the deaths were 7941, the birth-rate being 33·84 per 1000 and the death-rate 23·09. There was during the year no unusual prevalence of diseases incident to the climate, but an outbreak of bubonic plague, which was confined to Port-of-Spain and suburbs, occurred on May 30th. Between this date and Sept. 25th 19 cases occurred of which 15 resulted in death. The preventive measures adopted were isolation of contacts, special scavenging by sanitary gangs, and destruction and bacteriological examination of rats. 3 cases of yellow fever also occurred, 2 in Port-of-Spain and 1 in San Fernando. Towards the close of the year the regulations dealing with the breeding places of mosquitoes were strictly enforced by the prosecution of householders on whose premises any stagnant water containing mosquito larvæ were found. These prosecutions resulted, in most cases, in the offenders being fined by the court, and the result has been satisfactory. Four-fifths of the premises in Port-of-Spain are now connected with the sewerage system, and the remainder will be sewered in the near future. The ravines and drains in the suburb of Belmont have been concreted, and the work of filling in the low-lying lands of the Woodbrook suburb has been continued, with the result that a number of possible breeding places of mosquitoes has been greatly diminished and cases of malarial fever are fewer and less virulent. In view of the distrust with which the health conditions of Trinidad appeared to be viewed by some of her sister colonies in the West Indies, the following statistics are quoted in which the mortality of the colony is compared with that of other colonies. According to the latest available records (those for 1907–08) the death-rate per 1000 in Jamaica was 37·25, in British Guiana, 36·9; and in Barbados, 26·86. For the same period (1907–08) the death-rate per 1000 in Trinidad was 25·6, which fell during last year to 23·09. It will thus be seen that the health conditions of Trinidad compare very favourably with those of the principal West Indian Colonies. The climate of Trinidad is hot but not unhealthy, and while the heat is sometimes oppressive during the day at certain seasons, the nights are almost invariably cool and conducive to sleep. Europeans who lead regular lives enjoy good health in most parts of the colony without the necessity of taking any special care or precautions, though there are certain districts in which malarial fever is common and care required. The number of admissions into the hospitals of Port-of-Spain and San Fernando during the year was 6093 and 2715 respectively. Of the total number discharged from both institutions 2714 were cured, 4871 were relieved, and 252 were recorded as not improved. The total number of deaths in the two hospitals was 967. There are also district hospitals at Arima, St. Joseph, Tacarigua, Couva, Prince's Town, Cedros, and Tobago, with an aggregate number of patients on March 31st, 1909, of 177. Special hospitals likewise exist in Trinidad and Tobago for the treatment of yaws patients. In the former there were on March 31st, 1909, 182 patients, as against 165 on the same date last year; in the latter there were 218, as against 109, a regrettable increase of 100 per cent. In the Leper Asylum there were 251 inmates on March 31st, 1909. The number of patients admitted during the year was 60; the discharges were 38 and the deaths 38.

THE WEIGHT OF HAND-FED INFANTS.

To the Editor of THE LANCET.

SIR,—Can any reader of THE LANCET give a table showing the average weight of infants fed by hand every month from birth, and giving the information separately for the sexes. There are published tables for those raised on mother's milk but not for those otherwise reared. Infants not fed on mother's milk seem heavier. I should be glad of a reference to any published tables or to hear of any original observations if not yet published.

I am, Sir, yours faithfully,

Dec. 13th, 1909. ENQUIRER.

OBSTETRICS AMONGST THE ANNAMITES.

Dr. Moti, who is now a lecturer in the Military Medical School of Val de Grâce, describes in *La Semaine Médicale* of Dec. 1st the practice of Annamite midwives as seen by him when he was stationed in Tonkin. The patient lies on a charpoy, under which a brazier of glowing embers is arranged so that the hot air ascends to the genital organs, thus warming the parts and doubtless acting beneficially, being to some extent sterilised. When the woman groans other women who surround the bed cry or chant also so as to drown the patient's cries. If the labour does not progress rapidly enough a woman carefully balances herself on the patient's iliac crests and with her heels over the fundus of the uterus applies the amount of pressure she thinks needed. This always seems to prove effectual, for Dr. Moti during the two years he was in the country never had to apply forceps. Although dirty rags are used as diapers and though the woman gets up in a few hours and goes on with her ordinary avocations septic complications are extremely rare. This may perhaps be partly explained by the hot-air treatment but is largely due to the avoidance by the midwives of all digital interference.

THE MANUFACTURE OF NITRO-BENZOLS AND ANILINE COMPOUNDS.

To the Editor of THE LANCET.

SIR,—Can any of your readers afford information, or refer me to any work or papers relative to the constitutional and local effects produced in the manufacture and handling of nitro-toluols and nitro-benzols, and in addition any prophylactics in use, and the local and general treatment of disturbances caused thereby? Are local irritations caused in the manufacture of aniline and its compounds?

I am, Sir, yours faithfully,

Dec. 11th, 1909. S. F. C.

A SOCIOLOGIST ON THE TREND OF MODERN MEDICINE.

Mr. H. G. Wells has been unburdening himself of certain suggestive "Scientific Anticipations" in the Christmas number of *T.P.'s Weekly*, which is largely devoted to a "symposium" of opinions on the question "Whither are we tending?" in which Mr. Arnold Bennett, Mr. T. P. O'Connor, the Rev. R. J. Campbell, and Mr. G. K. Chesterton discuss literature, Parliament, faith, and social evolution respectively. Mr. Wells begins his discussion of medicine as follows:—"The general mass of the medical profession, equipped with a little experience and a muddled training, and preposterously impeded by the private adventure conditions under which it lives, goes about pretending to the possession of precise knowledge which simply does not exist in the world." But after this bitterness he proceeds to speak with considerably more hopefulness as to the future of medicine. Indeed, he is inclined to think that science will advance chiefly along the lines of increased biological knowledge in its widest sense, for "masked, misrepresented, limited, and hampered, the work of establishing a sound science of vital processes in health and disease is probably going on now, similar to the clarification of physics and chemistry that went on in the later part of the eighteenth, and in the early years of the nineteeth, centuries." Mr. Wells also looks forward to the time when medicine will "take over this great hinterland of human interests which legitimately belong to it," as assuredly it is doing already. He proceeds to speculate upon the future possibilities of surgery, and anyone with a knowledge of the unlimited rein which Mr. Wells gives his imagination will not need to be assured that he predicts wonderful achievements on the operating tables of the future. In support of his expectations he quotes the belief of the late Sir Michael Foster. The doctrine of Metchnikoff could hardly have escaped his attention. After repeating that revolutionary scientist's indictment of the large intestine he continues: "If a gentleman called upon me 'done up' in the way I am dimly suggesting, with most of the contents of his abdomen excavicated, his lungs and heart probably enlarged and improved, parts of his brain removed to eliminate harmful tendencies and make room for the expansion of the remainder, his mind and sensibilities enhanced, and his liability to fatigue and need of sleep abolished, I should conceal with the utmost difficulty my inexpressible disgust and terror. But then, if M. Blériot, with his flying machine, ear-flaps, and goggles, had soared down in the year 54 B.C., let us say, upon my woad-adorned ancestors at Dover, they would have had entirely similar emotions. And at present I am not discussing what is beautiful in humanity, but what is possible—and, being possible, is likely to be attempted." But having thus made his readers' flesh creep, the prophet of surgical progress closes on a more pleasant note, suggesting that man may yet come to such wisdom as to cultivate physical perfection without the intervention of the knife, and that, if we read aright the promise of modern therapy, is the future of medicine to which we may, indeed, look forward with longing and some slight hope. The dictum of John Hunter should never be forgotten that the necessity for operations is the reproach of surgery.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 16th, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Dec. 10	30·15	S.W.	0·05	52	50	33	45	46	Overcast
,, 11	29·90	S.	0·17	50	49	46	47	47	Overcast
,, 12	30·00	N.E.	0·01	44	44	37	35	37	Overcast
,, 13	30·30	E.	0·01	46	45	37	43	44	Overcast
,, 14	30·36	E.	...	46	43	39	39	41	Overcast
,, 15	30·33	N.E.	...	42	40	39	37	39	Overcast
,, 16	30·16	S.E.	0·01	39	39	35	35	37	Overcast

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Evans), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson). 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).
TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles).
WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. H. Pirie).
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.
TUESDAY.—5 P.M., Clinical Demonstration:—Dr. J. Mackenzie.
WEDNESDAY.—3 P.M., Clinical Demonstration:—Dr. F. Palmer.
THURSDAY.—3 P.M., Clinical Demonstration:—Dr. T. D. Savill.
FRIDAY.—2 P.M., Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M., Clinical Demonstration: Dr. R. Macnamara.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (22nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (23rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, (9 A.M., Major, 2 P.M.).

FRIDAY (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (25th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

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IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

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